THE CITADEL

Catalogue 1978-1979

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BULLETIN
OF
THE CITADEL

THE MILITARY COLLEGE OF SOUTH CAROLINA
CHARLESTON, S. C.

FOUNDED 1842

CATALOGUE ISSUE
1978-1979

"I call, therefore, a complete and generous education that which fits a man to perform justly, skillfully, and magnanimously all the offices, both private and public, of peace and war." — Milton

IEUTENANT GENERAL GEORGE M. SEIGNIOUS, II, USA, RETIRED

President

MAJOR GENERAL WALLACE E. ANDERSON

Vice President for Academic Affairs and Dean of the College

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1978-1979 College Calendar

1978

SUMMER SCHOOL

June 5, Monday	8 a.m. First session begins
July 1, Saturday	Classes held (makeup for July 4)
July 4, Tuesday	Holiday, Independence Day
July 7, Friday	First session ends
July 10, Monday	8 a.m. Second session begins
August 11, Friday	Second session ends. Summer Graduation Exercises

FIRST SEMESTER

August 21, Monday	9 a.m. New cadets report
August 28, Monday	2 p.m. Old cadets report
August 29, Tuesday	8 a.m. Registration
August 30, Wednesday	Classes begin
September 5, Tuesday	Last day to add a course or chang sections
October 18, Wednesday	Mid-term grading period ends
October 28, Saturday	Parents' Day (Delaware)
November 2, Thursday	Preregistration for second semeste
November 11, Saturday	Homecoming (Wofford)
November 22, Wednesday	Thanksgiving furlough begins afte last scheduled morning class or 1 noon, whichever comes first
November 26, Sunday	10 p.m. Thanksgiving furlough end
November 27, Monday	Classes resume
November 30, Thursday	Last day to drop a course
December 8, Friday	Classes end
December 11, Monday	Examinations begin
December 19, Tuesday	First semester ends

1979

SECOND SEMESTER

January 7, Sunday	10 p.m. Christmas furlough ends
January 8, Monday	8 a.m. Registration
January 9, Tuesday	Classes begin
January 15, Monday	Last day to add a course or change sections
February 27, Tuesday	Mid-term grading period ends
March 13, Tuesday	Preregistration for fall semester
March 17, Saturday	Corps Day
March 22, Thursday	Spring holidays begin after last scheduled class
April 1, Sunday	10 p.m. Spring holidays end
April 23, Monday	Last day to drop a course
April 30, Monday	Senior examinations begin
May 1, Tuesday	Reading day for lower classes
May 2, Wednesday, to May 9, Wednesday	Semester examinations
May 12, Saturday	Commencement

SUMMER SCHOOL

June 4, Monday	8 a.m. First session begins
June 30, Saturday	Classes held (makeup for July 4)
July 4, Wednesday	Holiday, Independence Day
July 6, Friday	First session ends
July 9, Monday	8 a.m. Second session begins
August 10, Friday	Second session ends. Summer Graduation Exercises

History of The Citadel

The Old Location and the New

From December 20, 1842, when the legislature of South Carolina passed an act providing for the establishment of The Citadel, to September 1922, the college was located on Marion Square. Since 1922, The Citadel has been situated on a beautiful campus between Hampton Park and the Ashley River.

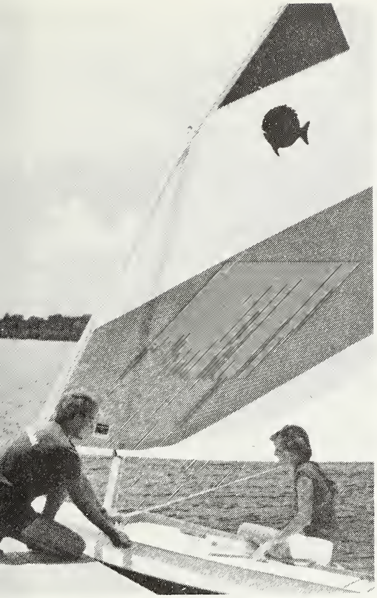
The Origin of the Name

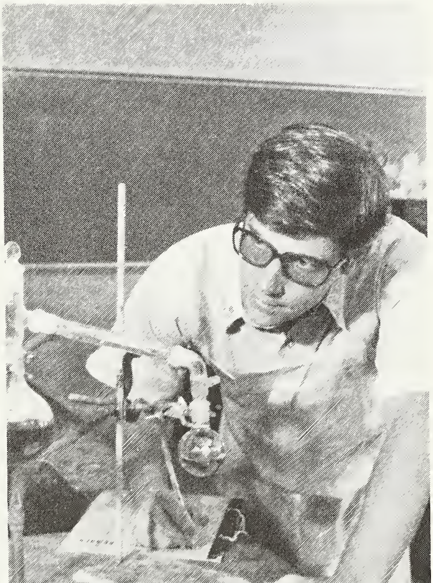
The Citadel derived its name from the building in which it was first housed. Erected as a state arsenal after the Denmark Vesey slave uprising in 1822, this sturdy old fortress, which still dominates Marion Square, was called The Citadel. It was garrisoned by federal troops, then by state troops, until they were replaced in March 1843 by 20 students who comprised the first Corps of Cadets. The cadets served as guards for the state's arms and pursued a course of study designed to make them useful citizens in time of peace as well as war.

With its sister school, The Arsenal, established at the same time in Columbia, The Citadel was a part of the South Carolina Military Academy. In 1845 regulations governing the institution subordinated The Arsenal to The Citadel and thereafter The Arsenal trained only freshmen. The Arsenal burned in 1865 and was never reopened.

The Citadel in the Civil War

The founders—men like Governor J. P. Richardson, J. H. Hammond, and General D. F. Jamison, who was later to preside over the convention at which the South Carolina Ordinance of Secession was signed—had foreseen that the state would need men with military training. When trouble between the North and South erupted in war, the record of Citadel alumni and cadets vindicated the foresight of the founders. Of the 224 alumni living at the time of the Civil War, 193 wore the Confederate grey, all but 20 as commissioned officers and 4 as generals. Thirty-nine were killed in battle.





On January 9, 1861—before the firing on Fort Sumter—cadets of the Corps manned the guns which drove back from the entrance of Charleston harbor the *Star of the West,* a steamer sent by the federal government to relieve the fort. Made a part of the military organization of the state by legislative act of January 28, 1861, the Corps of Cadets helped emplace and guard artillery on James Island, performed guard duty in Charleston, and on December 6-9, 1864, suffered several casualties in an engagement with Union troops at Tulifinny Creek near Yemassee Station.

From February 18, 1865, when a Union force marched into Charleston, until April 1879, the buildings on Marion Square were occupied by federal troops, and the operation of the college was suspended.

The Reopening After the Civil War

The Citadel reopened on October 2, 1882, with an enrollment of 185 cadets. Though the Corps no longer served as arsenal guard, the military system of the antebellum years was continued.

In 1910 the name of the college was changed to The Citadel, The Military College of South Carolina. During the administration of Mayor T. T. Hyde, the City Council of Charleston gave the state the present site of the college in 1918. In the fall of 1922 the college began operating at its new location.

The Student Body

In 1864 there were 145 cadets in the Corps. When the move to the new campus was made there were almost 300. In 1947-48, 2,271 students were enrolled, including cadets and veterans. Nearly 3,500 veterans of World War II and the Korean Conflict, most of whom were civilian students, attended the college under the G.I. Bill. That Citadel program for veterans ended in 1960 but was resumed in 1967. Male veteran students now attend day classes with the Corps of Cadets. Since 1950 women have been admitted to summer sessions, the Evening College, which was originated in 1966, and the Graduate Program, begun in 1968.

Seven hundred Citadel graduates and ex-cadets served in the armed forces in World War I. About 6,000 alumni and ex-cadets were on active service in World War II. Of these, 280 died for their country. Some 1,500 were on active duty during the Korean Conflict; 450 were in combat and 26 gave their lives. Sixty-five made the supreme sacrifice in the Vietnam war. Virtually all graduates on active duty have been commissioned officers.

General Information

Educational Standing

The Citadel, a fully-accredited senior college, is a member of the Southern Association of Colleges and Schools, the American Council on Education, the American Association of Colleges for Teacher Education, and the Association of American Colleges.

The programs in civil engineering and electrical engineering are accredited by the Engineers' Council for Professional Development. The Department of Chemistry is accredited by the American Chemical Society.

The National Council for the Accreditation of Teacher Education has granted accreditation to programs to prepare secondary teachers at the baccalaureate degree level.

The Objectives of The Citadel

The objectives of The Citadel are to offer courses in the liberal arts and sciences that will develop the minds and characters of the students, increase their likelihood of success in useful pursuits, and fit them to discharge the duties of citizenship; to provide concentration in certain professional and technical fields which will enable its graduates to compete successfully in business or the professional practice of their specialties; to ensure that its graduates are equipped in their respective fields of concentration to enter postgraduate, professional, or technical schools; and, through participation in an unsurpassed system of military training, to qualify for commissions in the armed forces those who desire to serve their country in that manner.

The college seeks also to provide activities, services, and facilities which contribute to the development of character, physical fitness, and moral and religious principles, thereby preparing students to meet the requirements of citizens and especially of leaders.

The Purpose of The Citadel's Military Environment

The Citadel is a liberal arts military college. While the college is proud of the military records of alumni and expects them to respond in national emergencies, its chief purpose is to prepare men for civil pursuits by providing a sound education reinforced by the best features of a disciplined environment.

The latter teaches the value of a methodical approach to tasks, of physical and mental fitness, of alertness and self-confidence. It teaches how to achieve and maintain morale and discipline. It instills the conviction that sacrifice is preferable to compromise with principle, and that truth, honor, and integrity are the bases of character.

Many desirable characteristics emanate from sources other than scholarship. For this reason, The Citadel adds the code of the cadet to its academic training. The symbol of this code is the proudly-worn uniform, a constant reminder that alma mater expects of every son not only the objectivity of a scholar, the public spirit of an enlightened citizen, and the honor and integrity of a gentleman, but the courage and bearing of a military leader.

Annual Physical Fitness Evaluation

All cadets may be required to take a physical fitness evaluation test during the early part of each fall semester. Cadets failing to meet minimum standards will be referred to an individual fitness program from which they will be released upon meeting the minimum standards.

Religious Influences

The Citadel is nonsectarian, but its high objectives cannot be achieved unless its educational program is founded on a solid religious life.

It is significant that the college in planning its building program included a cadet chapel which in size, dignity, and beauty would be a fitting reminder to all cadets that education must be founded upon spiritual strength. Imposing, churchly, and always accessible, the Summerall Chapel is the center for Protestant worship. A worship service is held each Sunday morning a 9:30. Music at this service is enhanced by the participation of The Citadel Choir and the four manual Reuter organ. The inscription on the front of the chapel is "Remember now thy Creator in the days of thy youth." (Eccl. 12:1)

In keeping with the religious emphasis at The Citadel, a full-time chaplain is available to all cadets for counseling guidance and spiritual advice.

Roman Catholic services are held in the Blessed Sacrament Chapel, as well as in the Summerall Chapel. Episcopal services are held in St. Alban's Chapel. Greek Orthodox and Jewish services are also conducted on campus.

Religious Groups

Monday night denominational group meetings afford opportunities for religious development. The program committee of each denominational group plans every meeting. Denominational sponsors from the major religious faiths in Charleston act as spiritual advisors to the cadets and their groups.

The Alpha Omega Society is a nondenominational group composed of pretheological cadets who have committed themselves to being ministers or may still be considering the ministry as their calling. The Citadel is justly proud that more than 160 graduates are clergymen.

The Citadel Religious Council

The purpose of the Religious Council is to advise the chaplain of the religious needs of the Corps of Cadets and assist him in planning the religious program.

Counseling Center

A student counseling service was established at The Citadel in September 1967 to provide psychological services in the areas of personal, vocational, and academic involvement.

The following services are available to all undergraduate students of the college:

—Confidential, professional counseling relating to the problems of personal adjustment.

—Academic and vocational counseling relating to diagnosis and evaluation of study skills and habits and selection and evaluation of vocational objectives.

—Testing service on demand (1) to administer aptitude and achievement tests to students as an aid in career planning, and (2) to administer specialized tests required when students apply for financial aid at graduate institutions.

Appointments may be made directly by the student or by referral from others such as professors, faculty advisors, company academic officers, tactical officers, and the medical officer.

The ultimate goal of the counseling service is to aid the individual in realizing the maximum development as an individual.

The Counseling Center is directed by Col. D. Oliver Bowman, counseling psychologist to the Corps of Cadets and professor of psychology.

Counseling Services for Prelaw and Premedical Students

The Citadel provides counseling and guidance to all students who have an interest in going on to law or medical school after graduation.

Anyone interested in a law career should seek advice early in his college career experience from the chairman of the Prelaw Committee, Maj. Paul R. Benson, Jr. (Capers Hall 406), and other members of the committee who are in the Political Science, History, English, Business Administration, and Education Departments.

Students interested in medicine and related fields should seek early advice from the chairman of the Premedical Committee, Lt. Col. Clinton A. Medbery, Jr. (Byrd Hall 117), and other members of the committee who are in the Chemistry, Biology, Physics, English, and Psychology Departments.

The Daniel Library and Archives

The Daniel Library, constructed in 1960, embodies the best features of modern planning for efficient library use.

The main collection contains more than 250,000 books, bound periodicals, and government documents and pamphlets. All are well catalogued and accessible to students in open stacks.

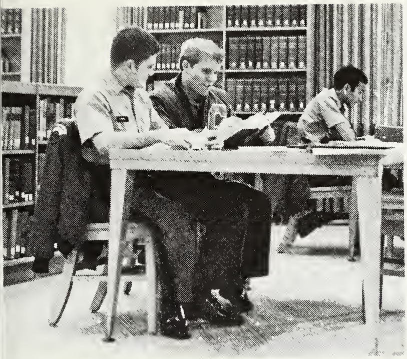
Each year more than 7,000 volumes are added. The library subscribes to some 1,400 periodicals and is a partial depository for government documents. Approximately 6,000 new government publications are received each year. The reference collection exceeds 11,000 volumes.

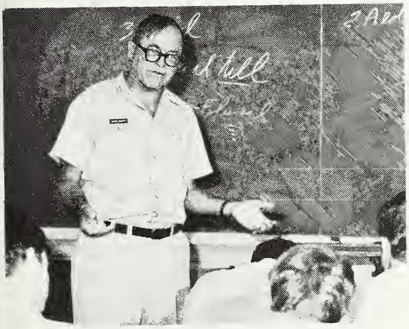
The library contains 106,000 microfilm reels, six microfilm readers, and machines for student copying of microfilm and other printed materials.

Departmental collections in the Chemistry and Civil Engineering Departments supplement the main collection. Books in all Citadel libraries are included in the library's card catalogue.

The General Mark W. Clark Archives contains some 60,000 manuscripts, 40,000 photographs and many films, tape recordings, newspapers, newspaper clippings, and artifacts. Invaluable as an original source of documents relating to World War II and the Korean Conflict, the archives has received national attention from archival institutions and historians.

In addition to the Clark collection, papers of General Hugh P. Harris, which give excellent background material on the development of airborne forces, are in the archives. Through an exchange microfilm program with the Eisenhower Library, the resources of that library are readily available.

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The library is a member of the Charleston Library Consortium, which maintains an agreement whereby Citadel students may use facilities of any of the other colleges and universities in the area. The total library resources available to Citadel students therefore exceed half a million volumes.

Computer Center

In recent years many important applications for high-speed digital computers have been found in practically all fields of human endeavor. The Computer Center was established for the purpose of offering training in this increasingly important field.

The depth and extent of a student's activities in this field are largely dependent on his field of study and on his own initiative and interest. Languages for communicating with the computer are taught in several courses in the sophomore and junior years. Computer programs are written by students and processed by Computer Center personnel.

The full facilities of the IBM 370 computer at the University of South Carolina are available to The Citadel Computer Center through a high-speed data link. The system has the ability to compile programs written in Fortran, Cobol, PL/1, and other languages. A large library of programs and subroutines is available to support work in business administration, statistics, engineering, the sciences, and mathematics.

Greater Issues Series

The Greater Issues Series was inaugurated in 1954 with a view to preparing our Corps of Cadets for roles as valued members of our society. Since then these addresses have brought to The Citadel an impressive group of distinguished individuals to speak on subjects of vital interest.

Speakers have included Presidents of the United States, a reigning monarch, American and foreign dignitaries, scholars, diplomats, important military figures, business leaders, and many others.

The Honor System

The Honor System of the Corps of Cadets makes a unique contribution to the overall educational process at The Citadel, one of the few colleges in the country that pay attention to the development of a sense of honor and duty as a part of the education of a young man. It is an integral part of the training received by a cadet, and the purpose is to inculcate a sense of honor in each Citadel graduate so that he instinctively conducts himself in an honorable manner under all circumstances.

The Honor Code is of, by, and for the Corps of Cadets. It states simply that a cadet does not lie, cheat, or steal, nor tolerate those who do. The Honor Code is enforced and supervised by a cadet Honor Committee made up of roughly 21 members of the first class who are elected by the three lower classes during the second semester of their second-class year. The Honor Committee has a representative in each company; one of his duties is to instruct incoming freshmen in the Honor System. He also interprets it during the year for all cadets in his company.

When a cadet is reported for an honor violation, the circumstances are thoroughly investigated; then, if there is a *prima facie* case established against him, he appears before an Honor Court composed of 10 members of the Honor Committee. Conviction by the Honor Court requires a unanimous secret vote of "guilty." If a cadet is found guilty by the Honor Court, he is separated from the Corps of Cadets.

The Honor Committee is responsible directly to the president. Each year he appoints a faculty advisor to the Honor Committee. This officer counsels it and acts in an advisory capacity at each Honor Court trial.

The Honor Committee distributes to all cadets for their guidance an honor manual describing the Honor System and its procedures.

Requirements for Admission

Personal Requirements

An applicant for admission to The Citadel must:

—be a male, at least five feet in height, and physically qualified for military training.

—be at least 16 and less than 21 years of age at the time of his entrance.

—be unmarried. No married person will be admitted as a cadet. If a cadet marries, he will be discharged.

—have no record of conviction of a criminal offense showing poor moral character.

—provide evidence from his school authorities and personal references that he is of good moral character and possesses the potential and the personality to conform to the ethical standards and the strict discipline of cadet life. The Citadel reserves the right to require of any applicant a written certificate to this effect signed by a least two graduates of The Citadel.

Educational Requirements

An applicant for admission to The Citadel must be a graduate of an accredited high school. This basic requirement for admission to the freshman class derives from the college admission requirements prescribed by the Southern Association of Colleges and Schools, of which The Citadel is a member. The standards of the Association require "the satisfactory completion of a four-year course of not less than 15 units in a secondary school approved by a recognized accrediting agency, or in a secondary school that is a member of this Association, or the equivalent of such a course as shown by examination." Successful completion of the General Education Development examination is accepted as equivalent.

The required high school subjects are as follows:

—four units of English.

—three units of mathematics, two of which must be algebra. For physical science and engineering majors, the third unit must be plane geometry.

—one unit of history.

A student desiring a B.S. degree in any of the fields of chemistry, engineering, mathematics, or physics must begin mathematics at The Citadel with 30-131 (Analytic Geometry and Calculus). It is strongly recommended that his preparatory background include four units of high-school mathematics with at least one-half unit of trigonometry. Students may qualify for admission to 30-131 by either of the methods presented below. Final determination of qualification rests with the head of the Department of Mathematics.

1. By earning a sufficiently high score on the College Entrance Examination Board's Achievement Test, Mathematics, Level I or II. This score together with the student's background in mathematics is subject to review by the Mathematics Department for final approval.

2. By successfully completing 30-103 and 30-104 (Pre-Calculus Mathematics and Finite Mathematics) or 30-119 (College Algebra and Trigonometry) at The Citadel.

If the second condition is used, it is suggested that the student take the qualifying courses in the summer session of The Citadel before entering as a freshman in order to avoid being behind in the four-year program of his choice.

A statement of the courses required each year in each department and a detailed description of these courses will be found on pages 99-131.

Entrance Examinations

All candidates for admission to The Citadel are required to take the College Entrance Examination Board Scholastic Aptitude Test (SAT), or the American College Testing (ACT) Academic Admissions test. The Mathematics Achievement Test is required for candidates majoring in engineering, chemistry, mathematics, or physics. The Citadel strongly recommends that both the English Composition and the Mathematics Achievement Tests be taken by all applicants. In the event an applicant's aptitude scores or high-school grades are considered too low, these achievement tests may then be required.

Students from a foreign country whose native language is not English must receive satisfactory scores on the Test of English as a Foreign Language (TOEFL). The TOEFL, prepared and adminstered by the Educational Testing Service of the College Entrance Examination Board, must be taken no later than March 1 of the spring preceding admission.

In order to apply for these tests, the applicant must write directly to College Entrance Examination Board, ATP, Box 592, Princeton, N.J. 08540, for its bulletin of information and application blank. These tests are normally offered at locations throughout the United States and in some foreign countries four times each year, September, November, February, and May. An application to take these tests must be submitted to the College Entrance Examination Board at least one month prior to the date of desired tests.

If an applicant lists The Citadel on his College Entrance Examination Board application as one of the colleges in which he is interested, his test scores will be sent to The Citadel approximately 30 days after the tests are taken. An applicant should complete the required entrance examinations no later than with the February test.

Admission Procedure

Formal application for admission must be submitted by parent or guardian on the blank application form provided on request by the Registrar, The Citadel, Charleston, South Carolina 29409.

A nonrefundable application fee of $15 must accompany each application.

Applications for admission should be submitted early in the prospective cadet's senior year in high school. In addition, the applicant should make early arrangements to take the SAT or ACT test and have test scores sent to The Citadel. He is also responsible to have his high-school record sent directly from his school.

The Citadel will advise the applicant of subsequent procedural actions as they are required.

A reservation fee of $100 is required of all new cadets accepted for enrollment (in the regular session at The Citadel), payable within 15 days after notification of acceptance by the admissions officer. Payment of this reservation fee will insure a place in the Corps of Cadets and will be applied to the first installment of regular college fees; it is not refundable to new cadets who cancel their reservations after July 1.

Each applicant approved for enrollment must undergo a thorough physical examination, the results of which must be reported on the physical examination form provided by the admissions officer at the time of notification of acceptance. This form also shows the immunization shots required by The Citadel. Final acceptance is contingent upon the results of this physical examination.

Admission Policy

The Citadel Committee on Admissions gives equal consideration to all applicants who meet the personal and educational requirements for admission. There is no discrimination because of race, creed, or color. No single factor determines acceptance of an applicant. The Citadel seeks to enroll well-rounded, mature students whose motivation and educational achievement indicate that they are prepared to do college work with reasonable probability of success. Therefore, the Committee on Admissions bases its decision concerning each applicant on an overall evaluation of the following:

1. High-school record (courses, grades, class standing). The high-school record tends to indicate an applicant's motivation, study habits, and scope of interest, thus permitting an evaluation of his educational potential and preparedness to do college work. Particular attention is given to the grades achieved in such college-preparatory subjects as English, mathematics, science, history, and foreign languages.

2. College Entrance Examination Board test scores. An applicant's test scores on the College Entrance Examination Board's Scholastic Aptitude Test and Achievement Tests receive considerable emphasis. Although test scores represent only one factor in the determination of an applicant's acceptability, they tend to indicate his educational development with respect to his contemporaries; therefore, they permit a reasonable evaluation of his actual preparedness and potential to do college work.

3. Recommendations. The personal evaluation of an applicant by a high-school official, normally the principal or the guidance counselor, must include a positive statement that the applicant is prepared, educationally and emotionally, to enter college. This recommendation is of great importance to the acceptance decision because it represents judgments on ability and maturity which derive from considerable experience with and observation of the applicant during his most formative years.

The recommendations of an applicant's personal references augment and reinforce the high-school official's evaluation and are therefore indispensable. They provide the Committee on Admissions with information relative to the applicant's background, personal characteristics, and reputation, as well as additional judgments of his readiness and suitability to enter college.

In general, The Citadel seeks to determine acceptability through a thorough evaluation of each applicant's character, maturity, motivation, readiness for college, amenability and obedience to authority, emotional stability, and potential as a contributor to cadet life. Where any of these factors are in question, the college will obtain additional information by means of any of the following: interviews with the applicant; interviews with parents and/or members of his community; a special report written by the applicant on such subjects as his goals in life, his reason for his choice of The Citadel, and/or the reasons supporting his choice of major field of study; a special test, to be taken by the applicant, designed to examine in detail any aspect of the applicant's character or potential.

Advanced Placement and Credit

CEEB Advanced Placement Program—The Citadel awards advanced placement and credit where appropriate to applicants who score three, four, or five on CEEB Advanced Placement Examinations given by the Educational Testing Service in the 11 fields of study listed in the 1975 College Entrance Examination Board's publication *College Placement and Credit by Examination.* The examination paper of a candidate scoring three may be reviewed by The Citadel academic department head concerned with the field of study, and advanced placement may be given with or without credit.

College Level Examination Program (CLEP)—The Citadel will also award advanced placement and credit for those who achieve a score on a CLEP Subject Examination as recommended by the Council on College-Level Examinations of the College Entrance Examination Board, and subject to conditions set forth below:

1. The accepted score will be equal to or above the mean score achieved by students on the national norms sample who earned a grade of "C" in a regular college course in the subject.
2. The amount of credit to be awarded will be determined by the scope of material measured, i.e. one or two semesters.
3. Credit will be awarded only on those subject examinations for which there is an equivalent course at The Citadel.
4. No student will be permitted to acquire more than 30 semester credit hours through the CLEP Subject Examinations.
5. Students will not be granted credit through CLEP for any course

previously taken at The Citadel, whether passed or failed, either for credit or audit.

Advanced Language Placement—Advanced language placement may be granted upon recommendation of the department head and the approval of the vice president for academic affairs. The department head's recommendation would be based upon evidence, usually derived from an interview with the entering cadet, of proper preparation and achievement to assure success in the advanced course. Qualified students will be allowed to bypass elementary or intermediate language courses. In general, those who have had two years of foreign language in high school or the equivalent should be able to take intermediate courses (201-202 or 203-204). However, they have the right to start any language at the basic level (101-102) if they so desire. In these cases of advanced language placement based on high school experience, no credit is awarded for the bypassed course or courses; electives will be required to make up for the bypassed semester hours.

Foreign Students and the Language Requirement—Students whose native language is not English and who score less than 500 on the TOEFL are required to take 94-103 and 94-104 (English as a Foreign Language) instead of a modern foreign language. They may substitute 6 semester hours of elective credit for the remaining 6 semester hours of modern language.

Initial Acceptance and Withdrawals

New cadets are admitted to the Corps of Cadets only in the first semester of the school year but may commence their academic work in the summer. Veteran students may be admitted at the beginning of each semester or either summer term.

If a cadet finds it necessary to withdraw from The Citadel during the college year or does not wish to return to The Citadel the September following any college year, a written request for an honorable discharge must be sent by his parent or guardian to the registrar.

If a veteran student finds it necessary to withdraw or not to return the following semester, he must submit a written request for a discharge to the registrar.

Special and Veteran Students' Admission

Admission Requirements:

Special or veteran applicants for admission must be graduates of accredited high schools or have been awarded equivalency certificates for satisfactory completion of the General Education Development examination. Each applicant should present the equivalent of four units of high-school English, three units of mathematics, two of which must be algebra, and one unit of history. For physical science and engineering majors, the third unit of mathematics must be plane geometry. An applicant must submit scores from the College Entrance Examination Board Scholastic Aptitude Test (SAT), unless waived by evidence of previous satisfactory college work, as determined by the Admissions Committee. A Certificate of Eligibility from the Veterans Administration must be filed with admission records.

Admission Procedure:

—Submit a completed application with nonrefundable $15 application fee.

—Ask all high schools attended to send complete transcripts of records.

—If high school was completed by taking the GED test, submit a copy of the equivalency certificate.

—If college was attended, ask the registrar to send directly to The Citadel complete transcripts of records.

—Request College Entrance Examination Board to send to The Citadel, Office of the Registrar, latest SAT scores.

—If the College Board Scholastic Aptitute Test has not been taken, an application form can be obtained by writing directly to College Entrance Examination Board, ATP, Box 592, Princeton, N.J. 08540.

—To complete file with The Citadel veterans' office, a certificate of eligibility must be obtained from the Veterans Administration and submitted to The Citadel. Eligibility for such a certificate is an absolute requirement for admission.

After receipt of all necessary information, applicants will be notified of action of the Admissions Committee.

Academic Policies

Grades

Only letter grades are given to evaluate a student's progress. The following definitions of letter grades are applicable:

1. "A" represents superior attainment on the part of the student.
2. "B" represents work that is clearly higher than the average, but not superior.
3. "C" represents average attainment of the basic standards set for the course.
4. "D" represents a minimum attainment of the basic standards.
5. "F" represents failure.
6. "I" represents work of satisfactory quality incomplete for authorized reasons. Incomplete (I) grades must be made up during the next semester in residence or within one year, whichever comes first, or they become F's. The summer session will not be considered a semester in this case. An extension of time due to extenuating circumstances may be authorized by the department head and the vice president for academic affairs.
7. "W" represents voluntary withdrawal from a course, at any time between the last day for adding a course or changing sections and *one week prior* to end of mid-term grading period.
8. "FA" represents forced withdrawal due to excessive absences. Excessive absences are those which jeopardize the student's likelihood of successfully completing a course and may not exceed 9 absences or 20 per cent of the meetings of a course, whichever is the lesser, except in extremely extenuating circumstances.
9. "WF" represents withdrawal with failing grade after one week prior to end of the mid-term grading period.
10. "WP" represents approved withdrawal with passing grade after one week prior to the end of the mid-term grading period.

No numerical symbol, bracket, or percentage is fixed or assigned the equivalent of any grade. Arbitrary distribution of grades according to some formula or curve is not used to obtain uniformity of grading. However, by means of departmental supervision and consultation between instructors, every effort is made to obtain consistent grading procedures within the department.

Students are expected to use proper grammar in all their course work, whether written or oral. Proper usage is necessary in college-level performance and is required by all professors.

Any change of grade deemed necessary by the faculty member concerned must be made within 30 days after the beginning of the next semester following the recording of the grade. The summer session will not be considered a semester in this case. After grades in a course have been submitted to the records office of the registrar, every request for a change of grade must be approved by the head of the academic department involved and the vice president for academic affairs.

Whenever a course previously passed is repeated, the last grade made for the course is the grade of record for computing quality points and grade-point ratio (GPR). Students are not permitted to register for a grade in any lower level sequential course, whether previously attempted or not, if credit has been received for a subsequent course in the same sequence for which the lower level course is a prerequisite. Prior approval of the department head of the subject course is required to repeat a course previously passed.

Whenever a course previously failed once or more than once is repeated and passed, the grade and credit hours from the immediately previous attempt are omitted in the computation of the grade-point ratio (GPR). In all cases, the grade of record is the final grade; however, credit hours from attempts prior to that immediately preceding the grade of record are retained in the GPR.

Grade reports are provided at the end of each semester. Mid-term progress reports are made available to show the status of the students' academic work.

Changes in schedule must be effected during the first seven class days of the term. A full-time student must continue to take courses with at least 12 semester hours credit each semester.

For purposes of ascertaining grade-point ratio to determine class standing or eligibility for promotion and graduation, grades are weighted as follows:

Grade	**Grade Points Per Semester Hour**
A	4
B	3
C	2
D	1
F, I, W, FA, WF, WP	0

The grade-point ratio for any semester is determined by dividing the total number of quality points earned by the total number of credit hours attempted, including the hours for which the following grades are received: A, B, C, D, F, FA, WF, I.

The cumulative grade-point ratio on which promotion, graduation, probation, and academic discharge are based is determined by dividing the number of quality points earned at The Citadel by the number of credit hours of record at The Citadel. Number of credit hours of record for this purpose includes all credit hours attempted at The Citadel for which the following grades are received: A, B, C, D, F, FA, WF, I, except that the credit hours for a course previously failed one time and then passed will not be included for the first time that course was attempted. However, if more than one failure attempt is involved, credit hours from attempts prior to that immediately preceding the grade of record will be retained.

In computing the cumulative GPR, quality points and hours earned at other institutions are not included in the totals.

Credit hours accepted for transfer from other institutions are included in cumulative hours of record for determining eligibility for promotion and compliance with standards on graduation, academic probation, and discharge.

Pass-Fail Grading System

Juniors and seniors with cumulative grade-point ratio of 2.0 or better may elect courses on a pass-fail option, but no more than one each term or a total of four for graduation credit. A student may not take on the pass-fail option any course which is required in his major. The decision of whether or not the course a student chooses is required in his major is the responsibility of the head of the student's major department. The student may not change his decision to take the course on the pass-fail basis or for a letter grade after the first two weeks of the term. Courses elected on the pass-fail option carry graduation credit, but no quality points, and are not included in GPR computations.

Instructors report grades as usual: A through F, FA, WP, WF, Incomplete. The records office translates grades as follows:

1. A grade of A through C as "S" (satisfactory, pass-for credit)
2. A grade of D or F as "U" (unsatisfactory, fail-no credit)

Transfer Credits

Entering students who desire transfer credits from other accredited colleges will have official transcripts sent to the registrar of The Citadel and will provide catalogue descriptions of the courses involved. The head of The Citadel academic department concerned and the registrar will then evaluate the courses to determine those for which transfer credit will be allowed. Only grades of "C" or better will be considered for transfer credit.

Students who expect to continue enrollment at The Citadel or to return after withdrawing may take courses at other accredited institutions for transfer to The Citadel provided prior authorization is obtained. To be eligible for transfer, each course must be certified by the department head concerned (or the registrar by delegation) as equivalent to a course at The Citadel, and the semester hours transferred will not be greater than for the equivalent Citadel course. Courses previously passed at The Citadel will not be accepted for transfer credit.

All transfer credits are provisional. If a department involved finds within four weeks after classes begin that the student is not prepared to take a course for which the course transferred is a prerequisite, the allowance or credit is withdrawn, and the student must take the prerequisite course at The Citadel.

To be eligible for graduation, all students, including transfer students from other colleges, are required to earn at The Citadel a minimum of one-half the semester hours prescribed for the major course of study. In addition, a student seeking the bachelor's degree shall receive at least 30 of the final 37 semester hours at The Citadel within a period of five years prior to date of graduation.

Candidates for degrees who do not complete all requirements for graduation when scheduled may take not more than two approved courses, totaling no more than 7 semester hours, at another institution for transfer to The Citadel. Prior approval of these courses by the department head concerned is mandatory. Normally the only courses which can be taken elsewhere will be those not offered at The Citadel during the summer session or semester involved.

For information on credit by examination, see Advanced Placement and Credit, page 22.

Promotions

Students meeting the minimum grade-point ratio for continuance in college without probation will be promoted to successive classes at the end of each semester provided they are not more than 8 credit hours behind in their major course of study.

Academic Probation and Discharge

a. Any full-time student who fails to pass successfully 24 semester hours in each 12-month period after entrance will be discharged for academic deficiency. Any part-time student must pass 50 per cent of hours attempted or 3 credit hours each semester, whichever is greater, in order to remain enrolled for the following semester.

b. A student will be discharged for academic deficiency in August or placed on academic probation for any semester when his cumulative grade-point ratio based on courses taken at The Citadel fails to meet the requirements of the table below. The column "Credit Hours of Record" includes credit hours accepted for transfer from other institutions.

Credit Hours of Record	Grade-Point Ratio for Continuance (on probation)	Grade-Point Ratio for Continuance (without probation)
0-39	1.00	1.10
40-69	1.25	1.40
70-99	1.50	1.70
100 & above	1.75	1.90

c. Students are subject to academic probation each semester, but are subject to discharge for academic deficiency in August only. Students who voluntarily withdraw at other times or who are discharged for other reasons while ineligible to continue based on the above table will also be listed as "academic deficiency."

d. Minimum grade-point ratio for the various categories are as shown above; however, the minimum GPR required will not be raised as a result of summer school work. That is, students moving from one category to the next higher category as a result of hours of record acquired in summer school at The Citadel or elsewhere will be required to meet the GPR minimum of the lower category for continuance in August.

e. Penalty for Probation

A student on probation will be denied the following:

1. Class leave privileges as specified by the commandant of cadets and approved by the vice president for academic affairs.
2. Holding of cadet military rank.
3. Authorization to take any course overload.
4. Voluntary class cuts.

f. A student will not be subject to academic discharge rules until the end of his second semester at The Citadel.

g. A student who is discharged for academic reasons for the first time may apply for readmission after being out of school for one semester.

(Summer school does not constitute a semester in this instance.) If approved by the Admissions Committee, he will be readmitted on a probationary status. Probationary status requires that he must, by the beginning of the next academic year (August), have obtained the minimum ratio of quality points to hours attempted for his category based on hours of record provided; however, additional probationary conditions may be imposed by the Committee on Admissions. Failure to meet probationary conditions of readmission will again subject the student to discharge for academic deficiency.

h. A student discharged a second time for academic reasons will not be considered for readmission.

i. To continue in school after the eighth semester requires the approval of the Academic Probation Committee.

Readmission Policy

A student wishing to return to The Citadel after he has withdrawn must file an application for readmission with the registrar. Action on this application is determined by the Committee on Admissions, which will consider not only the applicant's past academic record, but also his suitability as a member of the Corps of Cadets. The recommendation of the Committee on Admissions must have the approval of the president.

Cadets who withdraw due to academic deficiencies will be ineligible for readmission consideration until the lapse of one semester of the regular school year. (The summer session is not considered a semester in this instance.) If a cadet who has been discharged for academic deficiencies is accepted for readmission, he will be on probation the following semester.

Any departure from this policy may be made only in cases with extreme extenuating circumstances.

Requirements for Graduation

For graduation, a student must complete satisfactorily one of the departmental major courses of study stated in this catalogue, and must achieve a grade-point ratio of 2.00 based on credit hours of record and quality points earned at The Citadel.

A student must complete, in residence, a minimum of one semester with at least 12 semester hours of passing work, approved by the department concerned, after his final change of major prior to graduation. (For purposes of this policy, both halves of a summer session will be considered a semester.)

A student seeking his bachelor's degree shall receive at least 30 of the inal 37 semester hours at The Citadel within a period of five years prior to late of graduation.

Normally, requirements for graduation are met by full-time students in our years, but a longer time may be required by those who are discharged ind then granted readmission. Whenever it becomes evident that a full-ime student cannot fulfill all the requirements for graduation within ive academic years (10 semesters), he will be discharged for academic leficiency.

A curriculum or graduation requirement if altered is not made retro-ictive unless the alteration is to the student's advantage and can be iccommodated within the span of years normally required for gradua-ion.

Unless authorized to the contrary by the vice president for academic iffairs, a cadet must be enrolled in and successfully complete ROTC every semester during which he is enrolled at The Citadel until he has completed eight semesters of ROTC, except that a cadet who transfers to The Citadel must be enrolled in and successfully complete ROTC during every semester he is enrolled at The Citadel. Students who must remain at The Citadel beyond the normal four years and who have ROTC requirements to complete will be retained as cadets and will not normally be designated as special students.

Voluntary withdrawal from or failure to register for ROTC courses normally is not permitted. If there are extenuating circumstances beyond the cadet's control, a cadet may withdraw or not register for ROTC provided he has the recommendation of the commanding officer of the ROTC unit involved and the approval of the cadet's academic faculty advisor and the vice president for academic affairs. He must, however, make up the ROTC courses missed in order to graduate.

A cadet pursuing a commission through an ROTC program must complete the entire ROTC program of the applicable service or that portion specified by the commanding officer of the ROTC unit concerned.

In addition to the formal credits required for graduation, the candidate must have demonstrated that he is of high character and worthy to receive the diploma of the college. Recommendations for graduation are made by the Academic Board to the Board of Visitors, which in turn awards the degrees.

Transfer Between ROTC Programs

The early selection of a service's ROTC program by a cadet is extremely important since the entire curriculum of each ROTC's progra differs from service to service and each is sequential and progressive A transfer between programs, therefore, may prove to be undesirable For these reasons, a cadet who transfers from one ROTC program t another after the freshman year may be required to make up certai ROTC courses so that he will have the proper background for the ne program. Any courses required to be made up will be in addition to th normal eight semesters of ROTC required for graduation. As note above, a cadet who is pursuing a commission will normally be require to complete an entire service's ROTC program.

As in the case of a change in an academic major, a cadet may no transfer between ROTC programs without written approval. Applications for transfer must be submitted on forms available in the ROT administrative offices. While all cadets are encouraged to obtain counseling before requesting any transfer, a cadet who is on an ROTC scholarship or who is seeking a commission must consult with both the losin and gaining ROTC commanding officers to ascertain the effect of th proposed transfer.

In no case of a transfer between ROTC programs will the number o ROTC semesters required for graduation be reduced, nor may mor than 16 credit hours be given toward completion of graduation requirements without the permission of the department head and the vice president for academic affairs.

Degrees

The degree of Bachelor of Arts is conferred upon satisfactory completion of the Chemistry, English, History, Mathematics, Moder Languages, Political Science, or Psychology program of study. Th degree of Bachelor of Science is conferred upon satisfactory completion of the Biology, Chemistry, Education, Mathematics, Physical Education, or Physics program.

The degree of Bachelor of Science in Business Administration is awarded to students who complete satisfactorily the program in Business Administration.

Graduates in Civil Engineering receive the degree of Bachelor of Science in Civil Engineering. Graduates in Electrical Engineering receive the degree of Bachelor of Science in Electrical Engineering.

Classification of Cadets

Cadets are arranged in four distinct classes, corresponding with the four years of study. Cadets pursuing the first year's course constitute the fourth or freshman class; those taking the second year's course, the third or sophomore class; those in the third year's course, the second or junior class; and those in the fourth year's course, the first or senior class.

Confidentiality of Student Records

The Family Educational Rights and Privacy Act of 1974 is a federal law which states (a) that a written institutional policy must be established and (b) that a statement of adopted procedures covering the privacy rights of students be made available. The law provides that the institution will maintain the confidentiality of student education records.

The Citadel accords all the rights under the law to students who are declared independent. No one outside the institution shall have access to nor will the institution disclose any information from students' education records without the written consent of students except to personnel within the institution, to persons or organizations providing students financial aid, to accrediting agencies carrying out their accreditation function, to persons in compliance with a judicial order, and to persons in an emergency in order to protect the health or safety of students or other persons. All these exceptions are permitted under the act.

Within The Citadel community, only those members, individually or collectively, acting in the students' educational interest are allowed access to student education records. These members include personnel in the offices of the president, vice president for academic affairs, registration and admissions, financial aid, comptroller, and commandant, and academic personnel within the limitation of their need to know.

At its discretion the institution may provide directory information in accordance with the provisions of the act to include: student name, address, telephone number, date and place of birth, major field of study, dates of attendance, degrees and awards received, the most recent previous educational agency or institution attended by the student, participation in officially recognized activities and sports, and weight and height of members of athletic teams. Students may withhold directory information by notifying the registrar in writing within two weeks after the first day of class for the fall term.

Request for non-disclosure will be honored by the institution for *only one* academic year; therefore, authorization to withhold directory information must be filed annually in the office of the registrar.

The law provides students with the right to inspect and review information contained in their education records, to challenge the contents of their education records, to have a hearing if the outcome of the challenge is unsatisfactory, and to submit explanatory statements for inclusion in their files if they feel the decisions of the hearing panels to be unacceptable. The registrar at The Citadel has been designated by the institution to coordinate the inspection and review procedures for student education records, which include admissions, personal, academic, and financial files, and academic, cooperative education, and placement records. Students wishing to review their education records must make written requests to the registrar listing the item or items of interest. Only records covered by the act will be made available within 45 days of the request. Students may have copies made of their records with certain exceptions, (e.g., a copy of the academic record for which a financial "hold" exists, or a transcript of an original or source document which exists elsewhere). These copies would be made at the students' expense at prevailing rates which are listed in the current catalogue. Education records do not include records of instructional, administrative, and educational personnel which are the sole possession of the maker and are not accessible or revealed to any individual except a temporary substitute, records of the law enforcement unit, student health records, employment records, or alumni records. Health records, however, may be reviewed by physicians of the students' choosing.

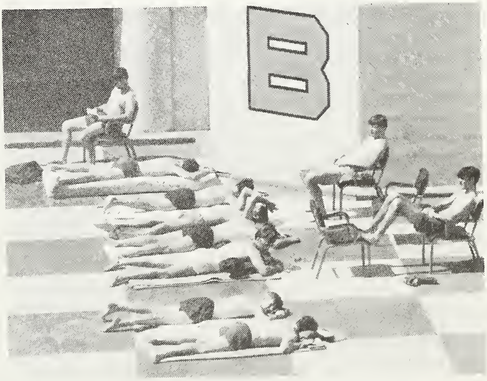
Students *may not* inspect and review the following as outlined by the act: financial information submitted by their parents; confidential letters and recommendations associated with admissions, employment or job placement, or honors to which they have waived their rights of inspection and review; or education records containing information about more than one student, in which case the institution will permit access *only* to the part of the record which pertains to the inquiring student. The institution is *not* required to permit students to inspect and review confidential letters and recommendations placed in their files prior to January 1, 1975, provided those letters were collected under established policies of confidentiality and were used only for the purposes for which they were collected.

Students who believe that their education records contain information that is inaccurate or misleading, or is otherwise in violation of their privacy or other rights, may discuss their problems informally with the registrar. If the decisions are in agreement with the students' requests, the appropriate records will be amended. If not, the students will be notified within a reasonable period of time that the records will not be amended; and they will be informed by the registrar of their right to a formal hearing. Student requests for a formal hearing must be made in writing to the vice president for academic affairs who, within a reasonable period of ime after receiving such requests, will inform students of the date, place, and the time of the hearing. Students may present evidence relevant to he issues raised and may be assisted or represented at the hearings by one or more persons of their choice at the students' expense. The hearing panels which will adjudicate such challenges will be the vice president for academic affairs and such other officials of the college as he may designate.

Decisions of the hearing panels will be final, will be based solely on the evidence presented at the hearing, and will consist of written statements summarizing the evidence and stating the reasons for the decisions, and will be delivered to all parties concerned. The education records will be corrected or amended in accordance with the decisions of the hearing panels, if the decisions are in favor of the students. If the decisions are unsatisfactory to the students, the students may place with the education records statements commenting on the information in the records, or statements setting forth any reasons for disagreeing with the decisions of the hearing panels. The statements will be placed in the education records, maintained as part of the students' records, and released whenever the records in question are disclosed.

Students who believe that the adjudications of their challenges were unfair, or not in keeping with the provisions of the act, may request in writing assistance from the president of The Citadel. Further, students who believe that their rights have been abridged, may file complaints with the Family Educational Rights and Privacy Act Office (FERPA), Department of Health, Education, and Welfare, Washington, D.C. 20201, concerning the alleged failures of The Citadel to comply with the act.

Revisions and clarifications will be published as experience with the law and institution's policy warrants.



Military Policies

General

The Citadel is justly proud of the record of its military training program which contributes significantly to the State of South Carolina and the nation in the form of military and civilian leadership. The Citadel is one of the few essentially military colleges remaining in the country. Today, Citadel graduates are adding to the rich heritage of their alma mater as officers in the armed forces and as leaders in the state and nation.

The military training at The Citadel is conducted by active duty officers and noncommissioned officers of the U.S. Army, U.S. Navy, U.S. Air Force, and U.S. Marine Corps. These active duty military and naval personnel are organized into the Department of Military Science (Army Reserve Officers' Training Corps), the Department of Naval Science (Naval Reserve Officers' Training Corps), and the Department of Aerospace Studies (Air Force Reserve Officers' Training Corps). Military and naval training is conducted for all cadets attending The Citadel, since it is a college requirement that all graduates must complete either the Army, Navy, or Air Force program. Additional information concerning the military programs offered at The Citadel may be found in the departmental section of this catalogue.

Commandant of Cadets

The commandant of cadets commands and administers the Corps of Cadets and its daily routine of duties. He grants leaves and other privileges provided by regulations and is charged with the maintenance of discipline over all cadets attending The Citadel. The commandant exercises supervision over barracks, controls the officer-in-charge and the cadet guard, and keeps the president of the college informed on matters pertaining to the administration, conduct, and discipline of the Corps of Cadets.

Discipline

Because The Citadel is a military college, high standards of conduct and discipline must be maintained. Through a system of merits and demerits, a record is kept of the conduct of each cadet. This record influences his military standing. Privileges are curtailed for those cadets who fail to respond to ordinary corrective measures. Any cadet exceeding the allowed limit of demerits may be dismissed.

By instruction and example cadets are taught to be neat in person and in uniform. Daily inspections of rooms insure cleanliness and good order. Through individual personal contact and group meetings, cadets are encouraged to uphold the traditions of The Citadel and the standards of honor, integrity, and courtesy which are an outstanding mark of the cadet and gentleman.

Management

Leadership, initiative, and character are developed by placing upon cadets the stimulating responsibilities of command within the organization.

All cadets live in barracks. From reveille to taps, every hour of the cadet's time is accounted for. The regular habits of study and living thus formed, the attention to duty, obedience to authority, and appreciation of order inculcated are considered among the most valuable features of the military education. While some of the graduates enter the military profession, hundreds in all walks of civil life attest to the high value of the training received at the institution.

The daily routine is regulated by the *Cadet Regulations,* generally known as "The Blue Book."

Allowances of Demerits

When any cadet accumulates more than 20 demerits per month in his senior year, 22 per month in his junior year, 24 per month in his sophomore year, or 30 per month in his freshman year, he will be declared unsatisfactory in conduct. Cadets repeating any part of the fourth class year are allowed only 24 demerits per month.

Customs and Courtesies

A booklet published at The Citadel is designed to provide cadets with a compact manual of proper etiquette and the customs and courtesies of the service. All cadets receive instruction in these subjects and are furnished a copy of this booklet for their personal use.

After explaining clearly the value of a knowledge of the correct way of conducting oneself in social contacts, the booklet presents detailed information on such matters as personal appearance and dress, table manners, introductions, calling cards, calling, social correspondence, overnight visits, and punctuality.

Automobiles

Cadets of the first, second, and third classes are granted the privilege of having cars and parking them in assigned parking areas on the campus. The privilege may be withdrawn on loss of good standing. Cars must be registered with the provost marshal. Evidence of legal state registration must be shown, and all registrants will be required to have a minimum of bodily injury liability insurance, $15,000 per person, $30,000 each occurrence, and property damage liability, $5,000 each occurrence. Parking permits in the form of stickers will be issued to each registrant on the day he brings his car on the campus. Stickers will be affixed permanently on the left-front and rear bumpers of the car. Parking fees and stickers are $5 per semester or portion thereof. Upon approval by the provost marshal, a two-week temporary parking permit, without charge, may be authorized. All cars parked on The Citadel campus and property will be parked at the owners' risk.

Leaves

By applying for permission for their sons' entry to The Citadel, parents voluntarily relinquish control over them to the authorities of the college, and it is expected that they will not ask for leaves for their sons except in emergencies. In every case the reason for the leave must be stated and the decision left to The Citadel authorities whether the circumstances warrant the approval of the application. This must be done before leaves will be approved.

The paragraph which follows is extracted from *Cadet Regulations:*

"1206.07. EMERGENCY LEAVES:

a. Emergency leaves may be granted only on the request of the parent or guardian in the event of death or critical illness of a member of the cadet's immediate family. Duration of this leave will be predicated upon distance and time required, but should normally not exceed 72 hours. The immediate family includes parents, grandparents, brothers, sisters, and the permanent resident members of the family.

b. 'Critical illness' is defined as an illness of such proportions that death may be imminent."

Special leave may be granted upon request of the family or guardian in the event of the marriage of a member of the cadet's immediate family or golden wedding anniversary in the cadet's family.

Cadets may be granted special leave for such unusual business affairs as cannot be arranged by correspondence, but require the presence of the cadet in person, in which case applications from parents or guardians stating the circumstances are required. In all cases, the final decision must rest with the authorities of the college.

The Citadel has a liberal weekend and overnight leave policy based on increasing class privileges for cadets who maintain academic and conduct proficiency.

Furloughs are granted at Thanksgiving, at Christmas, in the spring, and upon completion of the second semester.

The following paragraphs pertaining to medical leaves are extracted from *Cadet Regulations:*

"140.08. CADETS FORBIDDEN TO ARRANGE FOR MEDICAL SERVICES: Except in an emergency occurring on leave requiring immediate attention, a cadet will not arrange for or receive professional treatment from doctors or specialists without permission from the Surgeon. Applications for any special leaves required for such treatment will be submitted to the Commandant and referred to the Surgeon. Cadets who are receiving medical care under the auspices of a private doctor will in all cases report the nature of the treatment, to include the illness and prescribed medication, to the Surgeon."

"140.10. SPECIAL MEDICAL AND DENTAL SERVICE:

a. Dental work, special examinations of the eyes, etc., should be looked after during the summer, Christmas, or Easter furlough periods. Special leaves will not be granted for these purposes.

b. In cases of emergency, there are competent specialists and ample facilities in Charleston to take care of any medical or dental needs of cadets. In matters of health, the Surgeon will advise the proper course to be taken.

c. In case the service of a local dentist, oculist, or other specialist is deemed necessary, the request therefor will be submitted to the Surgeon, who, if he approves the request, will make all necessary appointments for the cadets. *No appointment with physicians other than the Surgeon will be made by any cadet to keep an appointment with a doctor in Charleston."*

The Fourth Class System

The purpose of the Fourth Class System at The Citadel is to lay the foundation, early in a cadet's career, for the development of those qualities of character and discipline implied in the mission of The Citadel as a military college—to produce young men with alert minds and sound bodies who have been taught high ideals, honor, integrity, loyalty, and patriotism; who accept the responsibilities which accompany leadership; and who have sufficient professional knowledge to take their places in a competitive world.

These personal qualities must be deeply ingrained in the individual so that neither time nor troubles will diminish his respect for complying with the customs and traditions set down for the fourthclassman's conduct. The tradition of The Citadel cannot be maintained by men who will do no more than is required of them. Self-discipline and self-evaluation develop men whose integrity and sense of duty cause them to serve selflessly beyond the prescribed limits of their tasks.

The Fourth Class System is both difficult and demanding. It represents an abrupt change from the life normally experienced in the home and encompasses the entire period of a cadet's first year at The Citadel. It is administered impersonally but at the same time exhibits the individual understanding necessary to effective leadership. It requires a full measure of mental preparedness and physical endurance.

Because of the nature of the new cadet's training during his first weeks at The Citadel, physical demands upon him are necessarily great. Experience indicates that the cadet who, prior to admission, has conditioned himself physically is best able to meet the training requirement. The candidate should strive for the degree of conditioning required for vigorous team sports. He is advised to practice heavy physical conditioning exercises (such as pullups, situps, and pushups) until many repetitions of the exercises can be performed without severe physical strain. In addition, he should strengthen his legs and wind by regular cross-country running. A program of vigorous competitive sports should be followed, with emphasis on a variety of sports rather than one favorite activity. Any candidate in doubt about his physical-conditioning methods would be well advised to consult a high-school or college physical education department. In addition, every applicant for entry into The Citadel should be assured by his physical examination that he has no history of physical ailments that might prove recurrent.

The Fourth Class System by nature is arbitrary on the surface. It demands prompt and unquestioning obedience of authority through the use of a collection of customs and traditions. However, each of the elements or customs has a specific purpose of furthering a cadet's development.

The system includes standing at a rigid position of attention, turning square corners when walking, undergoing neatness inspections before formation, learning various items of fourth-class knowledge, working on approved company details such as minor chores incident to keeping one's own area of barracks in order, and submitting to a variety of minor restrictions concerning the use of certain campus grounds and facilities, the wearing of the uniform, and the general conduct of a fourthclassman.

Cadets who are unable to meet the desired standards or violate one or more of the customs are subject to corrective action. This can range from a verbal reprimand to walking tours on the quadrangle of barracks and may include restriction to limits of campus. In extreme cases, any cadet who is unable to conform to the military way of life may be brought before a suitability board to determine his fitness to continue at The Citadel.

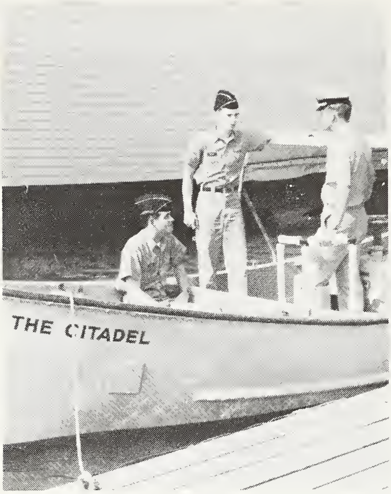
The measures described above are designed to test a cadet's mettle and to determine his motivation for cadet life. Their value lies in developing a cadet's ability to perform his duty successfully under trying and stress-producing conditions.

Hazing is not a part of the Fourth Class System and is not condoned. The suffering of degradation, humiliation, and indignity does not foster the rapid development of those qualities sought in fourthclassmen.

The Fourth Class System is a formidable challenge to any young man. The decision to enter The Citadel must be preceded by a conviction on the part of the prospective cadet and his parents that he has the mental and physical characteristics appropriate to the system and that he possesses a willingness to undergo the system's rigors with a determination to see it through and to reap its benefits.

Although the system is demanding and difficult, the rewards are considerable. They more than justify the effort. At recognition by the Corps in May, a better man emerges—one who is mentally, morally, physically, and spiritually prepared to accept the reins of leadership which will ultimately be his at The Citadel and in the world.

Those students transferring from the national service academies, specifically the Military Academy, the Naval Academy, the Air Force Academy, the Coast Guard Academy, and the Merchant Marine Academy, having been enrolled thereat for a minimum of two semesters, have the option of transferring out of the Fourth Class System after one semester at The Citadel, provided at that time they are at least academic sophomores and further provided they are in the upper half of their peer ratings. Such transfers must also carry the recommendation and approval of the cadet chain of command. All other transfer students will be expected to undergo a full year of the Fourth Class System at The Citadel.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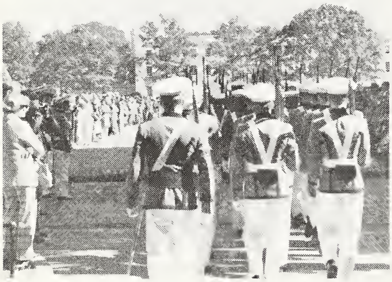


ROTC Programs

ARMY ROTC PROGRAM

The mission of the United States Army Detachment at The Citadel is to provide military science instruction to facilitate the development of qualities and attributes required by successful Regular or Reserve officers of the United States Army. Upon successful completion of the Army ROTC program, The Citadel cadet has received not only an academic education, but a well-rounded background including the time-honored traditions of the military officer. A high sense of honor, duty, self-discipline, personal integrity, and leadership are emphasized during all phases of military instruction providing The Citadel graduate with the high personal standards and character traits that have been continually demonstrated by Citadel alumni in not only the armed forces, but also in civilian pursuits.

U.S. Army ROTC Graduates

Army ROTC graduates receiving Reserve commissions as second lieutenants normally serve from three months to three years on active duty, depending on the needs of the service. Cadets who at the start of their first-class year have clearly demonstrated high moral character, outstanding leadership traits, and academic excellence in the military arts may be selected as Distinguished Military Students. Upon graduation, the Distinguished Military Student is designated as a Distinguished Military Graduate and has the opportunity to apply for direct appointment in the Regular Army. Those accepted as Regular Army officers will serve a minimum of three years on active duty.

Scholarships

The Army sponsors one-, two-, three-, and four-year scholarships for outstanding cadets who desire careers as officers in the United States Army. Each scholarship provides for free tuition, textbooks, and laboratory fees. In addition, the scholarship recipient receives a monetary subsistence allowance of $100 a month for the academic year that the scholarship is in effect.

Pay and Allowances

Certain reimbursements are funded by the Department of the Army for ROTC cadets in the Army program. Cadets enrolled in the basic course (initial two years) will have a $153 uniform allowance credited to their accounts each year. Those cadets formally enrolled in the advanced course (final two years) will have a $248 uniform allowance credited to their accounts each year. In addition, those cadets who sign an Army contract during the advanced course will receive a $100 allowance paid to them each month by check. During a six-week advanced camp, between their junior and senior college years, all cadets attending the camp receive one-half the base pay of a second lieutenant plus 8 cents per mile travel to and from camp to their home of residence.

Enrollment

The basic requirements for formal enrollment in Army ROTC are as stated below. These requirements must be fully met before the professor of military science can consider a cadet for enrollment in the Army program. Cadets not meeting these requirements are not eligible for commissions or ROTC monetary allowances.

Be a citizen of the United States.

Be of good moral character. Cadets convicted by civil or military court for offenses other than minor traffic violations are not eligible for enrollment without specific approval of the Department of the Army. A cadet may apply for a waiver of conviction, provided the offense was nonrecurring and did not involve moral turpitude.

Maintain satisfactory academic standards with his class.

Maintain a satisfactory leadership rating. This rating is determined by the commandant of cadets, the professor of military science, and other appropriate Citadel officials.

Be physically qualified under Department of the Army standards. Qualification for the basic course (initial two years) is usually met by a statement from The Citadel surgeon that the cadet can perform normal military duties.

Formal enrollment in the advanced course (final two years) and application for an Army contract requires an Army administered physical examination, normally given during the spring of the third class (sophomore) year. Waivers of physical defects are granted only in exceptional cases, and then only by authority of the Department of the Army. Any degree of uncorrected visual acuity is correctable to 20/40 in one eye and 20/70 in the other eye, to 20/30 in one eye and 20/100 in the other eye, to 20/20 in one eye and 20/400 in the other eye. Both eyes must be free from disfiguring or incapacitating abnormality and from acute or chronic disease. In addition, the applicant must pass an Army administered physical fitness test given prior to acceptance.

NAVY/MARINE ROTC PROGRAM

The Citadel's Naval Reserve Officers' Training Corps Unit was the first of three such units in the country established as being Marine oriented, although this unit does produce both Marine and Navy officers. Because of its location in a coastal city with a major Naval complex and nearby Marine Corps facilities to render support, this unit is perhaps unique in its ability to educate and train Naval officers.

Two programs leading to commissioned grade in the Naval Services are offered: The Navy/Marine Corps Scholarship Program for selected Naval Scholarship cadets assigned to The Citadel who seek Regular commissions in the Navy or Marine Corps and have their tuition and the majority of their college expenses paid by the Navy Department; and the Naval ROTC College Program for cadets who seek Navy or Marine Reserve commissions and receive limited financial assistance during their junior and senior years.

Navy/Marine Scholarship Program

Navy/Marine Scholarship students are selected through national competition and attend one of the 54 colleges or universities with Naval ROTC units. Each year a number of the Naval ROTC College Program cadets at The Citadel may receive direct scholarship appointments from the professor of naval science. The Naval Scholarship cadets attending The Citadel may enroll in any academic major approved by the professor of naval science. Emphasis will be placed upon engineering and hard science majors for those whose goal is a Navy commission. These students enlist in the Naval Reserve and attend three summer training cruises with pay. In return, the Navy Department provides tuition, most fees, all textbooks, a uniform allowance, and $100 a month subsistence allowance. Upon graduation, Naval Scholarship cadets receive Regular commissions as ensigns in the U.S. Navy or second lieutenants in the U.S. Marine Corps and serve on active duty for a minimum of four years.

Naval ROTC College Program

The Naval ROTC College Program is offered for cadets who wish to earn commissions as Reserve officers in the U.S. Navy or U.S. Marine

Corps. These Naval cadets may enroll in any academic major at The Citadel. College Program students join the Naval Reserve during thei junior year and must attend a minimum of one summer training cruise with pay. The Navy furnishes all naval science textbooks, provides an annual uniform allowance, and pays a monthly subsistence of a least $100 a month during the junior and senior years. Upon graduation, these Naval cadets are commissioned as ensigns in the U.S. Nava Reserve or second lieutenants in the U.S. Marine Corps Reserve and usually serve on active duty a minimum of three years.

College Program cadets may compete in national competition for eithe Navy or Marine scholarships; additionally, they are eligible to compete fo direct appointment to scholarship status through the professor of nava science.

Enrollment

To be eligible for enrollment in the Naval ROTC program one must:

—be a citizen of the United States;

—have reached the 17th anniversary of his birth by June 30 of the year enrolled;

—not have reached the 21st anniversary of his birth by June 30 of the year enrolled;

—be physically qualified (defective vision must be correctable to 20/20 and waivers for color blindness may be considered).

Those cadets not qualified for or not desirous of formal enrollment i either the Scholarship or College Programs may participate in nava science courses for academic credit only. They will not be eligible fo appointment to commissioned grade.

Selection of Navy/Marine Option

Naval cadets may, upon matriculation, exercise an option and indicate a desire for a commission in either the U.S. Navy or U.S. Marine Corps. This option must be exercised prior to the beginning of the junior year as the Navy and Marine curricula become independent during the last two years. All candidates for the Marine-option must have the recommendation of the Marine officer instructor and the approval of the professor of naval science.

NROTC Summer Training

Navy/Marine Scholarship cadets are required to perform training of approximately six weeks each of the three summers between their freshman and senior years. The first summer's training is performed aboard operational ships of the fleet. During the second summer, Naval cadets receive orientation in four major naval warfare areas at major naval installations. These warfare areas include surface warfare, submarine welfare, naval aviation, and Marine Corps amphibious warfare. During the third summer, candidates for U.S. Navy commissions perform their training aboard fleet operational ships, serving as junior officers; candidates for U.S. Marine Corps commissions perform their training at the U.S. Marine Corps Development and Education Command, Quantico, Virginia. Transportation costs to and from the sites of training, subsistence and quarters-in-kind, and one-half of an ensign's or second lieutenant's pay will be paid to all participating Naval cadets.

Naval ROTC College Program cadets are required to perform one summer of training duty between the junior and senior years. The period of training is about six weeks. Candidates for commissions in the U.S. Naval Reserve normally will perform their training aboard operational ships of the fleet. Candidates for the U.S. Marine Corps Reserve commissions will normally perform their training at the U.S. Marine Corps Development and Education Command, Quantico, Virginia. Transportation costs to and from the sites of training, subsistence and quarters-in-kind, and one-half of an ensign's or second lieutenant's pay will be paid to all participating Naval cadets.

Summary of Estimated Naval ROTC Allowances

Navy/Marine Scholarship Program:

In addition to full payment of tuition, college fees, textbooks, and instructional supply fees, all Navy/Marine Scholarship cadets receive the following annual payments:

Uniform allowance (same as College Program)
$4,000 Subsistence ($1,000 each year)

One-half of an ensign's or second lieutenant's pay for summer training period.

Meals, quarters, and transportation are at government expense.

College Program:
Fourth Class Year:
$153 (approximately) uniform allowance

Third Class Year:
$153 (approximately) uniform allowance

Second and First Class Years:
$496 (approximately) uniform allowance
$2,000 subsistence allowance ($1,000 each year)

AIR FORCE ROTC PROGRAM

The mission of The Citadel's Air Force ROTC Detachment is to provide instruction, training, experience, and motivation to each cadet choosing the Air Force ROTC program and to insure that he possesses the knowledge, character, and qualities of leadership essential to an officer.

Emphasis is placed on the preparation of the dedicated professiona officer who accepts responsibility readily, thinks critically and creatively and writes and speaks effectively. The Air Force ROTC program a The Citadel is a major source for this kind of Air Force officer.

Citadel graduates have served both the Air Force and the nation wel in war and peace. Today's Citadel cadets can be expected to assume important command and managerial positions in the aerospace forces of the future.

Four-Year Program

The four-year Air Force ROTC program at The Citadel serves as a major commissioning route for young men interested in becoming officers in the U.S. Air Force.

Each student enrolls at the beginning of his freshman year, and during the first two years he pursues the General Military Course. This presents the organization, mission, and functions of the U.S. defense establishment and examines the development of air power over the past 75 years

At the end of the sophomore year cadets who are physically qualified and have maintained good academic standing may apply for entry into the advanced portion of the program. Each cadet desiring a commission will attend a four-week field training course.

The selected cadet then enrolls in the Professional Officer Course, the last two years of the Air Force curriculum. Included in the third-year curriculum are studies in communicative skills, leadership in theory and practice, the principles and functions of management, and problem solving. The final year includes the military justice system, the role of the professional officer in a democratic society, the requisites for maintaining adequate national security forces, the constraints upon the national defense structure, the effect of technological and international developments on strategic preparedness, and an analysis of the defense policy-making process.

Formal Enrollment Requirements

General Military Course

1. Be a citizen of the United States.

2. Be physically qualified. The most frequently occurring disqualifying item is failure to meet vision standards. Some minimum acceptance vision standards are: pilot, 20/20 uncorrected in both eyes; navagator, 20/70 correctable to 20/20 in both eyes; non-rated, 20/400 correctable to 20/30 in one eye and 20/40 in the other.
3. Maintain satisfactory academic standards.
4. Have good moral character.
5. Sign a certificate of loyalty to the United States Government.

Professional Officer Course

1. Complete the General Military Course.
2. Pass the physical requirements.
3. Agree to serve on active duty for six years if qualified for pilot or navigator. Other categories are for four years.
4. Enlist in the USAF (Obligated Reserve Section) for a specified period of time. A cadet selected for the Professional Officer Course who willfully evades the terms of his advanced course contract or who completes the course but declines to accept a commission when offered may be ordered to active duty to serve in his enlisted grade for a period not to exceed two or four years depending on whether or not the cadet is enrolled under the AFROTC scholarship program. Under the latter program, enlisted service may extend to four years.
5. Maintain satisfactory academic standards and graduate with his class.

Field Training

Citadel cadets pursuing a commission through AFROTC are required to attend a four-week field training course at an Air Force base, normally during the summer between the sophomore and junior years. To most cadets this is a memorable experience, because they get a close-up look at Air Force life and operations. Each cadet receives practical guidance in aircraft and aircrew indoctrination, small-arms familiarization, physical training, survival training, and career-officer orientation, as well as training in many other areas needed by the Air Force professional.

Field Trips

The vast scope of the United States Air Force is difficult to portray in the classroom. In partial compensation, the Air Force ROTC detachment at The Citadel takes selected cadets to the Air Force—in the form of field trips to Air Force bases. On these trips the cadets receive briefings on base activities, observe Air Force operations firsthand, and, as a highlight, take an orientation ride in a large jet transport. They return to school with a more accurate perspective of the global nature of the organization in which they will serve. Experience has shown that these visits are of considerable value in developing a cadet's appreciation of the challenging Air Force officer's career that lies ahead.

Pay and Allowances

Students formally enrolled in Aerospace Studies I and II are paid a uniform allowance of $153 per year. Freshmen and sophomores must be enrolled at least through the sixth week to receive this allowance. Students formally enrolled in the advanced course are paid $496 as a uniform allowance ($248 each year). Uniform allowances are not paid directly to the students but are credited to their student accounts.

A cadet selected for the Professional Officer Course will be provided subsistence pay at the rate of $100 per month beginning on the day he starts advanced training and ending upon the completion of his instruction. In no event shall any cadet receive such pay for more than 20 months.

AFROTC College Scholarship Program

To attract top-quality students, Air Force ROTC is authorized to grant up to 6,500 scholarships which give scholarship recipients full tuition, laboratory fees, incidental fees, and allowance for books. Additionally, they are paid a tax-free subsistence of $100 per month. Students attending The Citadel or desiring to attend are eligible to compete for these AFROTC scholarships. Selections are made on the basis of the cadet's academic grades, officer aptitude as reflected on the Air Force Officer Qualifying Test, SAT scores, medical examination, demonstrated performance, and an interview by a panel of officers.

Expenses

The Citadel, The Military College of South Carolina, is one of nine institutions of higher education supported by the State of South Carolina.

The cost of operation is underwritten through collection of fees from the students and appropriations made by the General Assembly of South Carolina. Nonresidents are required to pay a larger portion of the cost of their education than is required of residents of South Carolina.

Mrs. Myriam Boyter, treasurer, is responsible for the collection of monies due The Citadel. All correspondence concerning fees, payments, and status of accounts should be directed to Mrs. Boyter.

Fees

The fees shown below in the schedule of payments are required to be paid by all students. Please note that the required fees at The Citadel include ALL NORMAL EXPENSES to be incurred by a student including dry cleaning, laundry, board, infirmary care, and supplies.

The college reserves the right at any time to adjust fees to meet the current cost of operation should it become necessary.

Payments

Payments of fees are due as shown in the schedule below. Bills for the regular academic year will be sent to parents or guardians approximately one month prior to the due date. All remittances should be by money order or check, made payable to The Citadel and mailed to the Treasurer, The Citadel, Charleston, S.C. 29409.

Since summer and evening school fees are based upon the credit hours taken, it is impossible to pre-bill these fees. See page 67 for information on the summer and evening programs.

All fees are due and payable prior to the date of reporting to school for registration. This advance payment date is necessary for the smooth functioning of the preregistration procedure in effect at The Citadel.

In those instances where parents desire to finance the cost of their son's education on a monthly installment basis, arrangements for such plans may be made with either the Tuition Plan of New Hampshire, Inc. or the Richard C. Knight Agency. Details of these plans may be secured by writing directly to the financial aid office at The Citadel. In any event, if loans are received from these institutions or any other financial institution, arrangements should be made with the lending institution to have the payments received by The Citadel on the due dates specified in the schedule of payments. Since all loans require several months for processing, it is imperative that applications be made no later than 90 days prior to the due date.

All college fees must be paid by the dates indicated in the schedule below. Failure to pay the invoice or any part thereof subjects the student to being dropped from enrollment at The Citadel. There will be a handling charge of $7 for a non-negotiable check. The Citadel will not accept personal checks from individuals who have issued two non-negotiable checks.

Schedule of Payments for South Carolina Residents

Due Date	*Freshmen*	*Sophomores*	*Juniors*	*Seniors*
*Reservation Fee on or before July 1	$ *100.00	$ *100.00	$ *100.00	$ *100.00
First Semester Fees 8/14/78 for freshmen 8/21/78 for upperclassmen	1,987.50	1,250.00	1,237.50	1,225.00
Second Semester Fees 1/8/79	1,212.50	1,225.00	1,212.50	1,200.00
Total Academic Year	$3,200.00	$2,475.00	$2,450.00	$2,425.00

Schedule of Payments for Out-of-State Residents

Due Date	*Freshmen*	*Sophomores*	*Juniors*	*Seniors*
*Reservation Fee on or before July 1	$ *100.00	$ *100.00	$ *100.00	$ *100.00
First Semester Fees 8/14/78 for freshmen 8/21/78 for upperclassmen	$2,417.50	$1,680.00	$1,667.50	$1,655.00

Second Semester Fees 1/8/79	$1,642.50	$1,655.00	$1,642.50	$1,630.00
Total Academic Year	$4,060.00	$3,335.00	$3,310.00	$3,285.00

Summary of Expenses for South Carolina Students

**Fees:	*Freshmen*	*Sophomores*	*Juniors*	*Seniors*
Registration Fee	$ 25.00	$ 25.00	$ 25.00	$ 25.00
Tuition Fee	125.00	125.00	125.00	125.00
College Fee	600.00	650.00	650.00	650.00
Auxiliary Services	1,300.00	1,300.00	1,300.00	1,300.00
Total Fees:	$2,050.00	$2,100.00	$2,100.00	$2,100.00
*Deposits for Books, Supplies, Uniforms, Accessories, and Breakage	$1,150.00	$ 375.00	$ 350.00	$ 325.00
Total Expenses for South Carolina Students	$3,200.00	$2,475.00	$2,450.00	$2,425.00

Summary of Expenses for Out-of-State Students

**Fees:	*Freshmen*	*Sophomores*	*Juniors*	*Seniors*
Registration Fee	$ 25.00	$ 25.00	$ 25.00	$ 25.00
Tuition Fee	385.00	385.00	385.00	385.00
College Fee	1,200.00	1,250.00	1,250.00	1,250.00
Auxiliary Services	1,300.00	1,300.00	1,300.00	1,300.00
Total Fees:	$2,910.00	$2,960.00	$2,960.00	$2,960.00
*Deposits for Books, Supplies, Uniforms, Accessories, and Breakage	$1,150.00	$ 375.00	$ 350.00	$ 325.00
Total Expenses for Out-of-State Students	$4,060.00	$3,335.00	$3,310.00	$3,285.00

*Additional deposit of $75 for freshmen who elect engineering drawing.

**A reservation fee of $100, credited to 1st Semester invoice, is required for all students, payable by July 1.

Explanation of Fees

Reservation Fee: A reservation fee of $100 is required of all cadets This fee is not an additional charge but is an advance payment toward the fees due for the fall semester. It assures a cadet a place in the Corps of Cadets and barracks for the following August.

All new cadets are required to pay this fee within 15 days after notice of acceptance has been received from the registrar.

A cadet currently enrolled who plans to continue his education a The Citadel is also required to pay the reservation fee not later than July 1 for the fall semester. If this fee is not paid by July 1, The Citade is in no way obligated to permit him to continue his education at The Citadel.

The reservation fee will be refunded to old students who notify the registrar in writing not later than July 1 to cancel their reservations a The Citadel. After July 1 but prior to registration for the fall semester this fee will be refunded only to those upperclassmen (sophomores juniors, and seniors) who have been dropped from enrollment at The Citadel due to academic deficiencies or other causes.

Those students who complete registration for the fall semester wil receive credit on the first payment for the reservation fee previously paid

Tuition—The Board of Visitors of The Citadel has established the following tuition fees:

South Carolina Students—For all students whose guardians or parents reside in South Carolina, the tuition and registration fees have been established at $150 per academic year.

Out-of-State Students—All students whose guardians or parents are nonresidents of South Carolina will pay an out-of-state tuition fee.

The out-of-state tuition and registration fees have been established a $410 per academic year.

College Fee—A college fee of $600 per freshman and $650 per upperclassman is assessed South Carolina students and $1,200 per freshman and $1,250 per upperclassman for out-of-state students per academic year. This fee is used in the support of the general overhead and maintenance of the college, plant improvement, student activities, and specia college programs. That portion of the fee going to the student activities is used in the support of student publications and organizations such as *The Sphinx,* student annual; *The Brigadier,* college newspaper; *The Shako,* literary magazine; *The Guidon,* an information and orientation handbook; social functions, including dances; and intramural program and athletics. That portion of the fee for athletics is not an admission fee to athletic contests, since students are admitted to all athletic games free of charge.

Auxiliary Services Fee—A fee of $1,300 per academic year is assessed each student to cover room, board, laundry, and normal hospital care. For the purpose of loan applications, room and board should be shown as $1,080, with the balance of $220 covering laundry and hospital.

Due to many uncontrollable factors, the college reserves the right to increase this fee at any time to meet current increases in the cost of operation. This fee is refundable on a pro-rated basis upon withdrawal from school.

Breakage—A $10 deposit will be maintained by all students enrolled at The Citadel. When there is insufficient money in the cadet's account to cover the cost of damages to buildings, rooms, equipment, or loss of ROTC manuals and government property, this deposit will be used. It is refundable after graduation or withdrawal from The Citadel.

Deposits for Books, Supplies, Uniforms, and Accessories—Each student is required to deposit funds to his account to cover the cost of books, supplies, uniforms, accessories, alterations to uniforms, purchase of dry cleaning and pressing tickets, laboratory fees, engineering drawing equipment and supplies, and other miscellaneous expenses relevant to his studies or attendance at The Citadel. The amount expended by each student varies according to the individual's needs. The amount of the deposit has been based upon the average needs. In most cases this amount is ample. However, if the needs of a student should exceed the deposit, additional funds will have to be deposited to his account.

The required deposits are as follows:

Freshmen	$1,150.00
Additional deposit for freshman engineering students (Students who elect engineering drawing will be provided a supplementary bill for this deposit to cover the purchase of drawing instruments and supplies.)	$ 75.00
Sophomores	$ 375.00
Juniors	$ 350.00
Seniors	$ 325.00

The above deposits have been kept to a minimum to cover only necessary educational and military uniform requirements. Different academic majors require additional funds due to laboratory fees and difference in cost of books. Science textbooks are more expensive than liberal art textbooks. Engineering majors are required to purchase drawing instruments and slide rules.

In those instances where the necessary expenditures exceed the required deposits, additional funds will have to be deposited to cover any overdrafts. Due to inflationary trends in our economy, the college cannot guarantee that purchases will not exceed the deposit.

The required deposits will not permit the purchase of additional sets of uniforms, nonessential or nonrelated educational items. Therefore, a student will not be permitted to charge against his account such nonessential purchases or charges as:

- Class rings
- Swords
- Magazine subscriptions or paperbacks not academically required
- Military services—dining-ins/mess nights
- Club dues

The above items may be purchased on a cash basis at the Canteen, Cadet Store, Athletic Department, or other designated departmental operation.

Additional sets of uniforms may be purchased for cash in the Cadet Store or additional funds may be deposited to cover the purchase of such items.

Uniforms—All cadets are required to wear The Citadel uniform which is issued by the college. New cadets should not bring a supply of civilian clothes other than those which are worn upon reporting to the college as they are not permitted to wear civilian clothes except during authorized furloughs.

Cost of uniforms should not be considered as an educational expense but rather a clothing expense which is incidental to attending any college. With proper care, the uniform should last for several years. Of course, the requirements during the subsequent years will depend on the manner in which the cadet has cared for his uniform. The overall cost of the uniform should not exceed that which would be incurred in purchasing clothes to attend a civilian college.

The woolen uniforms issued to cadets are custom-made for The Citadel. Once the uniforms have been fitted and issued to a cadet the entire cost will be charged to him.

Since the uniforms are tailor-made to the measurements of each cadet after enrolling at The Citadel, every cadet withdrawing from the college will be charged a cancellation fee for canceling the purchase of uniforms manufactured or fitted to him.

The cost of articles and uniforms issued to freshmen during the 1978-79 academic year (based on current costs) is estimated to be as follows:

Quantity	*Article*	*Cost*
1	Bedspread, Citadel	$ 11.20
1	Blanket, Citadel	11.50
1	Blouse, dress wool	93.83
1	Blouse, full dress, wool	121.90
1	Cap, dress	12.35
1	Cap, field	4.20
1	Cap, white	11.80
1	Coat, overcoat, wool	106.98
1	Coat, rain	25.25
1	Coat, white w/accessories	36.46
4	Collars, white, at 85 cents	3.40
3	Cuffs, pairs, at $1.25	3.75
6	Gloves, pairs, white drill, at $1.25	7.50
1	Gloves, pair, leather	12.00
1	Jacket, grey	38.39
1	Muffler	1.40
1	Shako, complete	25.15
7	Shirts, light grey, short sleeve, at $5.50	38.50
3	Shirts, white, short sleeve, at $6.70	20.10
2	Shirts, tee, Citadel, at $1.70	3.40
2	Shorts, gym, at $2.00	4.00
1	Suit, sweat	8.50
1	Suspenders, white	1.10
4	Trousers, blue/grey, at $10.10	40.40
2	Trousers, white, reg., at $17.14	34.28
2	Trousers, white, full dress, at $16.85	33.70
2	Trousers, dress, wool, at $39.27	78.54
1	Trousers, grey, T.W.	33.52
3	Bags, laundry, at $2.25	6.75
1	Bathrobe	12.25
		$842.10

Miscellaneous Items:

1 belt w/2 bkls; 2 belt tips, 1 cap cover, rain; 1 cuff links, pr.;

2 letters, company; name tags, 1 mattress cover; 10 hangers; 2 numerals, class; 1 plate, breast; 1 plate, waist; 1 supply kit; 1 "T" pins, box; 1 webbing, roll; cartridge box, 2 locks; 1 desk pad, complete; 1 paper, white, ream; 1 paper, yellow, ream; marking kit; shoulder boards, pr.	$ 62.00
Total	904.10
S.C. sales tax	36.16
	$940.26

The prices above are estimated costs for the 1978-79 academic year and are subject to changes in accordance with the contract prices at the time of purchase by cadets. Extra shirts, trousers, or other articles of uniform in excess of the above quantities are not included in the required deposit. *Additional deposits will have to be made if extra shirts, trousers, or other articles of uniform are desired.*

In order to keep the appearance of the Corps of Cadets at the highest level, an inspection will be made of the articles of uniform of members of the third (sophomores), second (juniors), and first (seniors) classes. If the uniforms do not meet the minimum requirements of appearance, the individual will be required to purchase a replacement for the unserviceable item of uniform.

Graduating Service Charge—The charge for diploma and other graduation costs is $20.

Transcript Fee—Official transcripts of scholastic records will be furnished upon request. There is no charge for the initial transcript, but a fee of $3 is charged on all subsequent ones. Remittances for transcripts should accompany the application for the transcript and should be made payable to The Citadel and mailed directly to the registrar.

Laboratory Fee—A laboratory fee of $15 a semester is charged students taking courses involving laboratory work in biology, chemistry, civil engineering, electrical engineering, geology, modern languages, and physics. These laboratory fees are used to cover the added expense of supplies and costly equipment used in the teaching of these courses. This fee is not collected but is included in the estimated deposit for books and supplies, and is chargeable against the deposit.

A fee of $2 a semester is charged to students in business statistics and senior accounting. A laboratory fee of $15 is charged to students taking any computer course.

Refunds

The Citadel is committed to many expenses based upon the anticipated enrollment at the beginning of each term. Registration at The Citadel is considered to be a contract binding the student and his parent or guardian to charges for the entire term.

However, students who withdraw during a term may receive partial refunds based on the length of attendance. Refunds will be computed from registration date until withdrawal date as determined by the registrar.

Authorized refunds are as follows:

Tuition and College Fees:

Length of enrollment	*Semester fees*
less than one week	80%
one to two weeks	60%
two to three weeks	40%
three to four weeks	20%
after four weeks	none

Auxiliary Services:

Room, board, hospital, and laundry fees will be pro-rated and refunded on the basis of days enrolled.

Deposits for Books, Supplies, Uniforms, and Accessories:

The unused portion of the deposit to the student's account for books, supplies, uniforms, and accessories will be refunded. Since this deposit is estimated to cover the needs of the student for such purchases during the entire academic year, it should not be expected that the school refund this money during the year to the cadet, veteran, or day student for his personal needs.

The unexpended balance of the deposit will be returned upon request at the close of the academic year; otherwise, it will be held to the student's credit until the next academic year, or until he withdraws or graduates from The Citadel.

Refunds will be mailed approximately 30 days after discharge or graduation.

Monthly Statement of Student's Account

A monthly statement is furnished each student. It is incumbent upon the student to verify each charge or credit made to his account. After he has verified the charges and credits, he should forward the statement to his parents or guardian for their information. If the student's account is overdrawn, he should go to the treasurer's office to determine if he should make an additional deposit.

Additional Information

Unsatisfactory Accounts—When a student's account is in an unsatisfactory condition, no honorable discharge will be made, no diploma will be awarded, and no transcript of credits will be provided until he has made a satisfactory settlement of the account.

Pocket Money—The college does not handle pocket-money accounts. All allowances for pocket money should be sent directly to the cadet. No estimate is made of this requirement, for the amount varies among the cadets and can best be determined by them and their parents.

Cadets who receive substantial allowances for their personal needs should deposit this money in The Citadel Depository, which is maintained for the accommodation and convenience of the cadets. This depository is located in the treasurer's office in Bond Hall.

Clothing and Bedding

All cadets are required to furnish their own bedclothes except a bedspread and blanket which will be issued to each cadet. These items can be used after graduation on single beds.

Beds and mattresses are provided by the college, but pillows are not. One plastic mattress cover will be issued at cost to each cadet. Cadets *must* come provided with the following articles:

Three pajamas
Twelve white tee shirts with V-neck and twelve short drawers
*Twelve pairs of black socks
Four pairs of white athletic socks
One pair of bedroom slippers or shower shoes
One pair of white tennis shoes
Ten white towels
One pillow
Two pairs of plain toe, smooth leather, black oxford shoes (with rubber heels) or one pair of plain toe, smooth leather, black oxford shoes (with rubber heels) and one pair of black oxford corfam shoes (with rubber heels). Fourthclassmen will not be authorized to wear corfam shoes to formation and inspections but will be authorized to wear them to classes, other duty, and when going on leave.
One Army-style blanket for single bed
Toilet articles
Four white sheets for single bed
Three white pillow cases
Twelve white handkerchiefs

*Black *cotton* socks are suggested. Experience has proven that the wearing of socks made of synthetic material has contributed to blistering and, in some cases, secondary infection.

In addition to the required items listed above, cadets may bring or obtain later the following articles:

1 desk lamp
1 picture with frame
1 radio, stereo, or tape recorder
1 clock
1 oscillating fan

Since the college does not furnish bed linens, it is advisable that each cadet who ships his belongings to The Citadel bring with him two sheets, one pillow case, and one pillow for his use until he is able to get access to his belongings.

New cadets are advised to break in their cadet uniform shoes at least three weeks prior to reporting to The Citadel.

Before the opening of the first semester a new cadet is assigned an identification number, which he retains as long as he remains at The Citadel. This six-digit number will be used by the cadet as an identification number and as his laundry number.

It is suggested that new cadets not mark their clothing, bedding, etc. prior to their arrival at The Citadel.

Upon entering The Citadel each new cadet is issued a marking kit bearing his name and initials and identification number for use in marking his clothing, uniforms, bedding, books, etc.

Luggage

It is advisable to bring inexpensive trunks and suitcases since it is not permissible to retain them in the cadet's room. Luggage must be stored in a warehouse. One piece (overnight bag) necessary for weekend or athletic trips may be kept in the cadet's room.

The Citadel has only a limited amount of space to store cadet luggage. Therefore, it is imperative that when a cadet withdraws or graduates, he should remove his luggage immediately from the warehouse before departing. If it is necessary to ship luggage home, it will be C.O.D. If after notification has been given an ex-cadet or graduate that his luggage has been left in the warehouse and no reply is received giving directions for shipment or disposal thereof, The Citadel will automatically dispose of the luggage.

Luggage sent by commercial transportation should be clearly identified with name of the cadet and shipped to The Citadel, Supply and Property Officer, Central Warehouse, Charleston, S.C. 29409.

The supply and property officer should be notified in advance of the shipment. Upon receipt, the luggage will be placed in the cadet's barracks.

Accommodations for Cadets During Holidays

Cadets who cannot go to their homes during extended holidays may remain on the campus and occupy quarters made available by the college. The barracks and the dining hall will be closed during vacations.

Employment

The time of a cadet at The Citadel is so taken up with his duties that there is little opportunity for employment for the purpose of financial assistance. However, there are a limited number of part-time jobs available from time to time with various campus activities. These jobs are not of a substantial nature which can be relied upon to pay a cadet's college fees.

Hospital

The medical staff and facilities at The Citadel are excellent, and all minor illnesses and minor injuries of cadets are treated in the infirmary without added expense to the parents. Medical and surgical cases requiring removal of the cadet to a hospital in the city, services requiring a special nurse in the college infirmary, special treatment of eyes, ears, teeth, etc., must be at the expense of the parents or guardian. When accident and health insurance coverage is available, this will be claimed so as to help defray overall operating expenses of the infirmary. The cost of special medical supplies or prescriptions will be charged to the student's account.

Other regular day students may be treated at the infirmary on an outpatient basis for minor illness or minor injury at a minimum cost per visit. For medical care requiring hospitalization, the student will be referred to a local hospital.

All other students (evening, graduate) may receive first aid at the infirmary only in cases of emergency occurring on campus (serious illness, serious injury) and will be immediately transferred to a local hospital. A charge will be made for such service.

Hospital Group Insurance

The Citadel has made arrangements with a private insurance company for a group hospitalization program available to all cadets and veteran students on a voluntary basis. The particulars of this program are provided the parents or guardians and veteran students prior to each school year. This program is approved by The Citadel but operated by the private insurance agency.

ROTC Allowances

Students formally enrolled (see pages 43-50 for particulars) in the basic course are paid by the government approximately $153 per year as a uniform allowance. Fourthclassmen (freshmen) and thirdclassmen (sophomores) must be enrolled at least through the sixth week to receive this allowance. Students formally enrolled in the advanced course are paid approximately $248 per year as a uniform allowance. Uniform allowances are not paid directly to the students but are credited to their accounts when received from the Army, Navy, or Air Force.

In addition to the uniform allowance a subsistence allowance of $100 per month is paid directly to those students under contract in the advanced course and to all Army, Navy, or Air Force scholarship cadets.

Students formally enrolled in Army ROTC must attend summer camp between their junior and senior years. Students receive one-half of a second lieutenant's pay while attending camp. During the camp period the subsistence allowance is not paid.

All NROTC College Program students are required to participate in summer training of six weeks between the second and first class years and receive subsistence and quarters-in-kind and one-half of a second lieutenant's or ensign's pay.

All Air Force ROTC students who are designated applicants for membership in the POC attend Air Force field training between the sophomore and junior years and are paid at the rate of one-half of a second lieutenant's pay for field training attendance in lieu of the $100 per month subsistence allowance.

Students attending field training summer camp are also paid a travel allowance, to and from the training site, at the rate of 8 cents per mile.

Summary of Estimated ROTC Allowances

Fourth Class Year (freshmen—formally enrolled)		*(Approximate)*
Commutation of Uniform Allowance***		$ 153.00
	Total	$ 153.00

Third Class Year (sophomores—formally enrolled)		
Commutation of Uniform Allowance***		$ 153.00
	Total	$ 153.00
Second Class Years (juniors—formally enrolled)		
Commutation of Uniform Allowance**		$ 248.00
Subsistence Allowance (estimate)*		$1,000.00
	Total	$1,248.00
First Class Year (seniors—formally enrolled)		
Commutation of Uniform Allowance**		$ 248.00
Subsistence Allowance (estimate)*		$1,000.00
	Total	$1,248.00

*Subsistence Allowance: Paid at the rate of $100 per month (paid only while under contract or scholarship).
**To scholarship and contract cadets only.
***To ROTC cadets (formally enrolled).

Payments Under the Army, Navy, and Air Force Scholarship Programs

Under the Army, Navy, and Air Force scholarship programs, The Citadel receives directly from the federal government payment for the tuition fee, college fees, and hospital fee valued at $850 and $900 for South Carolina freshmen and upperclassmen, respectively, and $1,710 and $1,760 for out-of-state freshmen and upperclassmen, respectively.

The schedule of payments of these ROTC scholarship students is as follows:

Schedule of Payments for South Carolina Students

FRESHMEN	Total	Amount Paid By Government	Amount Paid By Student
First Semester	$1,987.50	$ 437.50	$1,550.00
Second Semester	1,212.50	412.50	800.00
Total	$3,200.00	$ 850.00	$2,350.00
SOPHOMORES			
First Semester	$1,250.00	$ 462.50	$ 787.50
Second Semester	1,225.00	437.50	787.50
Total	$2,475.00	$ 900.00	$1,575.00

JUNIORS			
First Semester	$1,237.50	$ 462.50	$ 775.00
Second Semester	1,212.50	437.50	775.00
Total	$2,450.00	$ 900.00	$1,550.00
SENIORS			
First Semester	$1,225.00	$ 462.50	$ 762.50
Second Semester	1,200.00	437.50	762.50
Total	$2,425.00	$ 900.00	$1,525.00

Schedule of Payments for Out-of-State Students

FRESHMEN	Total	Amount Paid By Government	Amount Paid By Student
First Semester	$2,417.50	$ 867.50	$1,550.00
Second Semester	1,642.50	842.50	800.00
Total	$4,060.00	$1,710.00	$2,350.00
SOPHOMORES			
First Semester	$1,680.00	$ 892.50	$ 787.50
Second Semester	1,655.00	867.50	787.50
Total	$3,335.00	$1,760.00	$1,575.00
JUNIORS			
First Semester	$1,667.50	$ 892.50	$ 775.00
Second Semester	1,642.50	867.50	775.00
Total	$3,310.00	$1,760.00	$1,550.00
SENIORS			
First Semester	$1,655.00	$ 892.50	$ 762.50
Second Semester	1,630.00	867.50	762.50
Total	$3,285.00	$1,760.00	$1,525.00

Additional items of cost are paid under the ROTC scholarship program as follows: when applicable, laboratory fees are billed to the government, and when the money has been received, it is credited to the cadet's account. The Army, Navy, and Air Force each pay up to $50 per semester for books purchased. The government is billed, and the payment for the books purchased is made directly to the cadet. *The subsistence allowance of $100 per month is also paid directly to the cadet by the Army, Navy, or Air Force.* Since these allowances are paid directly to the cadet, deductions cannot be allowed against the payments due The Citadel for board or book deposits included in the schedule of payments.

Any excess funds in a cadet's account which have been generated by credits from the ROTC scholarship may be refunded to the parent upon request at the end of the school year, or they may be left toward payment of fees for the next year or any excess purchases that may be needed.

Day and Veteran Students

Upon request, certain cadets who have completed their four years of military requirements but lack a few hours of credit for graduation may be granted the privilege of completing their work at The Citadel as day students. Certified veterans are also permitted to attend as day students.

The use of The Citadel infirmary is available to both veteran and day students upon payment of the prescribed semester hospital fee, or in accordance with the published schedule of individual visit rates.

The schedule of payment for both day and veteran students is as follows:

Schedule of Payments for South Carolina Students

Fees:	**Total**	**1st Semester Fees Due 8/21/78**	**2nd Semster Fees Due 1/8/79**
Registration Fee	$ 25.00	$ 25.00	
Tuition	125.00	62.50	$ 62.50
College Fee	600.00	300.00	300.00
Book and Supply Deposit	150.00	75.00	75.00
Total	$900.00	$462.50	$437.50

Schedule of Payments for Out-of-State Students

Fees:	**Total**	**1st Semester Fees Due 8/21/78**	**2nd Semester Fees Due 1/8/79**
Registration Fee	$ 25.00	$ 25.00	

Tuition	385.00	192.50	$ 192.50
College Fee	1,200.00	600.00	600.00
Book and Supply Deposit	150.00	75.00	75.00
Total	$1,760.00	$ 892.50	$ 867.50

Students financing their educations through the Veterans Administration may arrange alternate schedules through the veterans affairs officer and the college treasurer.

Summer Session

A summer session is conducted for students who wish to accelerate their work or to make up conditions or failures.

The summer session must be self-supporting, and the same fees must be charged to both South Carolina and out-of-state students. Fees for the two-term summer session are as follows:

	Each Term
Registration	$ 5.00
Tuition—$35 per semester credit hour (undergraduate)	....
Tuition—$35 per semester credit hour (graduate)	....
Room, Board, Laundry, and Infirmary	192.00
Laboratory—for laboratory courses in biology, chemistry, physics, computer science, and languages	15.00

A withdrawal fee of $10 will be charged and tuition refunded if withdrawal is after three class meetings. In addition, a course change fee of $5 will be charged.

During the summer session all purchases of books and supplies will be on a cash basis. There will be no charging to the student's account since no book or supply deposits will be collected.

Bills for the summer session will not be sent to the parents by the treasurer. It is impossible for the treasurer to compute these bills since the tuition fee is based on the number of credit hours of work scheduled by the student. The student should come supplied with sufficient cash to take care of his fees for the summer session. Details of the summer school program may be had by obtaining a copy of the Summer School Bulletin from the registrar.

Evening College Program

The Citadel has established an evening program of college courses leading to a baccalaureate degree and designed to meet the needs of individuals who are interested in continuing their college education, who need more formal education, or who desire education for the purpose of broadening their cultural, business, professional, or avocational interests.

The program maintains the same academic standards that prevail in the regular program. All courses, unless specified otherwise, carry full college credits. The content of all courses is the same as that presented during the regular college session. Courses are under the jurisdiction of the regular academic department heads.

High-school graduates and present or former students in good standing with accredited institutions of higher learning are eligible for admission to the evening program.

A tuition fee of $30 per semester hour is charged for all undergraduate credit courses. The fee for auditing a course is $15 per semester hour. Other fees are: registration fee (nonrefundable)—$5; laboratory fee (sciences and languages)—$15; withdrawal fee (after one class meeting)—$10; course or section change fee—$5; and I.D. card—$2. There will be no refund of tuition after the second class meeting.

Courses will be offered during two semesters. The fall semester is from September to December and the spring semester from January to May.

For further information write Director, Evening College, The Citadel, Charleston, S.C. 29409.

Scholarships

Beginning with the fall term of 1978, several Citadel scholarships will be available. Each year some of these are given to cadets entering The Citadel for the first time; others are awarded to cadets presently in the college, based on accomplishments in the Corps both academically and militarily. The scholarships listed below fall under four categories:

Category I —Authorized by the Scholarship Board of Trustees of the Board of Visitors and selected by The Citadel Scholarship Committee.
Category II —Authorized by the Scholarship Board of Trustees of the Association of Citadel Men and selected by The Citadel Scholarship Committee.
Category III —Authorized by the president of the college and selected by The Citadel Scholarship Committee.
Category IV —Given by individuals or companies directly to recipients without any selection by The Citadel Scholarship Committee.

The Citadel assumes the responsibility for awards given under the first three categories. Listed below are some of the current scholarships:

Category I

The Captain William Forman Abernethy Memorial Scholarship has a value of $400. It is awarded annually to the rising senior who has shown the greatest amount of determination and perseverance in improving himself during his years at The Citadel.

The Joseph D. Aiken Scholarships cover all expenses, as outlined in the catalogue, for the first three years and are supported by a trust fund made possible by a bequest of the late Mr. Joseph D. Aiken. They are limited to applicants from the New England states, with some preference given Rhode Island and Connecticut residents.

The Lillian Malone and Edgar Stanton Alexander Scholarship has been established by Mr. Dietrich Biemann Alexander, Class of 1922, in memory of his parents. It pays $500 a year to a cadet from Greenwood County, South Carolina.

The Major James W. Ayers Scholarship is in memory of Major Ayers, Class of 1957, who lost his life in the service of his country in Vietnam. It is given to an entering freshman, with preference to one interested in becoming a member of the United States Marine Corps upon graduation. The value is $500 a year for four years.

Baruch Scholarships, with a value of $500 each for one year, were inaugurated from the income of a fund donated to The Citadel by the late Mr. Bernard Baruch. Awarded annually to one senior and one junior.

The Alton H. Bryant Memorial Scholarships are worth $1,000 a year for four years. They are in memory of Lieutenant Alton H. Bryant, a graduate of the Class of 1940, who lost his life in the service of his country. Applicants are limited to residents of Orangeburg County, South Carolina.

The Richard P. Cardwell Scholarship was established by General Eugene F. Cardwell and the late Mrs. Cardwell in memory of their son, Cadet Richard P. Cardwell, a member of the Class of 1957. It is given each year to a member of the sophomore class and has a value of $500.

The Carrigg Scholarships were established by a bequest to The Citadel and have a value of $1,000 a year for four years.

The Frank W. Cayce Memorial Scholarships are four-year scholarships and pay $1,000 per year. These scholarships were made possible by his grandmother, the late Mrs. Zulale J. Dowling, who bequeathed to The Citadel her entire estate for the purpose of establishing an educational scholarship fund in memory of her grandson, Cadet Frank W. Cayce.

The Mark W. Clark Scholarship was established by General Mark W. Clark, president emeritus of The Citadel. This scholarship pays $1,000 a year for four years.

The Renie Clark Scholarship is $1,000 a year and awarded each year to a member of the senior class who best exemplifies the traits Mrs. Clark demonstrated in assisting students to adjust to cadet life. This scholarship is a memorial to Mrs. Mark W. Clark, who was the first lady of The Citadel for more than 11 years.

The Crouch-Lee Scholarship has a present value of $500 a year for four years. The James R. Crouch award was founded in 1925 by the late

Mr. James R. Crouch, Class of 1899, of Greenville, South Carolina. The William States Lee Scholarship was founded the same year by the ate Mr. William States Lee, Class of 1894, of Charlotte, North Carolina. The deeds provided that the beneficiary shall be limited to a resident of South Carolina.

The Daniel Scholarships are derived from the income of a fund donated to The Citadel by Mr. R. Hugh Daniel and his brother, the late Mr. Charles E. Daniel. These scholarships range in value from $400 for one year to $1,000 a year for four years. Restricted to engineering and business administration majors from South Carolina, Georgia, and Alabama.

The Dillon County Scholarships were established by the late Mr. W. Thomas Dillon and pay $500 a year. Restricted to cadets from Dillon County, South Carolina.

The William S. Dosher Scholarships were established by Dr. William S. Dosher and pay $1,000 a year for four years. Preference is given to applicants from New Hanover and Brunswick Counties, North Carolina.

The duPont Scholarships were established by the late Mrs. Jessie Ball duPont and subsequently increased by a contribution from the Jessie Ball duPont Religious, Charitable, and Educational Fund. They have a monetary value of from $200 to $500 for one year.

The Captain Joe Wofford Eubanks Memorial Scholarship was established by the parents of the late Captain Joe Wofford Eubanks, Class of 1969, who lost his life in the service of his country in Vietnam. It is restricted to out-of-state cadets majoring in history and having financial need. It pays $500 a year.

The Thomas Holland Evans Memorial Scholarship was established by Mr. and Mrs. Thomas Evans in memory of their son, Lieutenant Thomas Holland Evans, Class of 1968, who lost his life while in the service of his country. It is given to an entering freshman, with financial need as a major requisite. It has a value of $500 a year for four years.

The Toney B. Jackson Scholarships, established by Mr. Toney B. Jackson of the Class of 1915, are given to members of the sophomore class and have a value of $500 a year for one year. Limited to residents of South Carolina.

The Charles A. Laffitte Memorial Scholarship fund was originally established by the late Colonel Charles A. Laffitte, Class of 1929 and member of the Board of Visitors, and his family. It was further increased by memorial gifts. These awards pay $500 to $1,000 a year and ar restricted to residents of Allendale and Hampton Counties. Need is major item of consideration.

The Freddie Levine Scholarship was established by funds contribute by friends of Lieutenant Freddie Levine, Class of 1955, who died in th service of his country. It pays $500 a year for four years.

The Broadus R. Littlejohn Scholarships were established in 1963 b Mr. Broadus R. Littlejohn, Jr., Class of 1949, in honor of his fathe They pay $500 a year for four years.

The Albert I. Love Memorial Scholarship has a monetary value c $500 a year for four years. This scholarship is to give financial assis tance to worthy young men from Colleton County, South Carolin The scholarship was established by the family of Mr. Albert I. Love i his memory.

The David S. McAlister Scholarship was established in honor c Colonel David S. McAlister in recognition of his many years of servic to the athletic program at The Citadel. It pays $500 a year for four yea to an athlete.

The Megonigal Scholarships were established by a bequest to Th Citadel. They have a monetary value of $500 for one year.

The Moore-Richards Scholarship was established in memory of th late Marion Lartigue Moore, Sr. and Mrs. Jennie Patterson Richard Moore by members of their family. The scholarship pays $500 a yea

The Major General Harry K. Pickett Memorial Scholarships are sup ported from a fund made possible by a bequest of the late General Pic kett USMC, Ret., Class of 1911. These scholarships have a value c $1,000 a year for four years. They are awarded to young men of hig moral character and citizenship with outstanding high-school record and financial need, who are either citizens of the State of South Carc lina or sons of United States Marines.

The Captain Anthony G. Prior Scholarship was established in memor of Captain Prior, Class of 1964, who lost his life while in the service o his country in Vietnam. It is awarded to a needy young man with a stron desire for a military career. The value is $500 a year for four years.

The Jesse Timothy Reese Memorial Scholarship was established b Mr. and Mrs. Jesse T. Reese, Jr., Class of 1934, in memory of his fathe Jesse Timothy Reese, Class of 1904. This scholarship pays $500 a yea for four years and is limited to entering freshmen from South Carolin

The Anne Seignious Memorial Scholarship was established by the Class of 1942 in memory of Anne Ficken Padgett Seignious, wife of Lieutenant General George M. Seignious, II, Class of 1942, president of The Citadel at the time of her death. The award pays $1,500 a year for four years.

The Rufus J. Sprott Scholarships were established by Mrs. Sprott in honor of her husband, Rufus J. Sprott, Class of 1923. They pay $500 a year. Restricted to residents of South Carolina.

The Edgar A. Terrell Scholarships are worth from $500 for one year to $1,000 a year for four years. They were made possible by a donation from the late Mr. Edgar A. Terrell, Class of 1915, and are limited to candidates from Mecklenburg County, North Carolina, or in case there are no qualified candidates, to the geographical boundary of the State of North Carolina.

The James Ripley Westmoreland Scholarship has a value of $500 a year for four years. This scholarship is to aid worthy South Carolina young men who are in need of financial assistance to obtain a college education. This scholarship is in memory of Colonel James Ripley Westmoreland, a graduate of the Class of 1900, who served as chairman and a member of the Board of Visitors for many years.

The George Walker White Scholarship has a value of $200 and is awarded annually to the rising senior civil engineering student who best exemplifies the qualities of a potential outstanding civil engineer.

The Judge C. C. Wyche Scholarships are made possible by a gift from the late Judge C. C. Wyche of the Class of 1906. They have a monetary value of $200 for one year.

Category II

Association of Citadel Men Scholarships.—The Association of Citadel Men maintains several scholarships in the amount of $200 each. The scholarships are awarded for one year only to both entering cadets and upperclassmen.

The Oliver J. Bond Scholarship is supported by the income from a trust fund established by alumni as a memorial to the late Colonel Oliver J. Bond, president of The Citadel, 1908-1931. The present value is $1,000 a year for four years.

The Mark Clark Scholarship is $1,000 a year for four years, supported jointly from an income made possible by General Mark W.

Clark, president emeritus of The Citadel, and from a trust fund established by the alumni in his honor.

The James W. Duckett Scholarships are supported by contribution from alumni in honor of Major General James W. Duckett, past president of The Citadel. These scholarships pay $500 a year for four years

The Hugh P. Harris Scholarships were established in honor of Genera Hugh P. Harris, past president of The Citadel. They pay $500 a yea for four years.

The Star of the West Scholarships were awarded for the first time i 1952. They cover all college expenses, as outlined in the catalogue, an are supported by the income from an anonymous trust fund. Thes scholarships are available only to students of outstanding ability an attainment without reference to financial need or geographical limitations.

The Summerall Scholarship is supported by the income from a trus fund established by alumni as a memorial to the late General Charle Pelot Summerall, president of The Citadel, 1931-1953. This scholarshi is worth $1,000 a year for four years.

The W. Steve Weston, Jr., Class of 1938 Leadership Foundatio Scholarship pays all expenses, as outlined in the catalogue, for fou years. It was made possible by a donation from Mr. W. Steve Weston Jr., and is limited to residents of South Carolina.

Category III

The W. W. Benson Scholarship pays all expenses, as outlined in th catalogue. Named in memory of the late Major W. W. Benson, Clas of 1907, it is supported by his friends from Greenwood County, Sout Carolina. Restricted to applicants from Greenwood County.

Cadet Insurance Aid Plan consists of several scholarships maintaine by the Cadet Insurance Aid Plan from revenue derived from the dividends of life insurance policies voluntarily purchased by members o graduating classes since 1953.

Citadel Scholars: Scholarship program supported by The Citadel Development Foundation to attract outstanding students. Twelve scholarships will be awarded each year to residents of South Carolina. Freshman year, $2,200, sophomore, junior, and senior years, $1,400 each. Selection will be made by the Committee on Scholarships of The Citadel, based on scholastic and leadership ability.

The Henry Deas, Jr., Memorial Scholarship was established by the friends of the late Mr. Henry Deas, Jr., Class of 1938. This award pays $250 in alternate years.

Harry S. Dent Americanism Scholarship, established by U.S. Senator Strom Thurmond, advisor to John P. Gaty Charitable Trust. Awarded annually to needy and worthy students, based on a paper on Americanism, the specific topic of which is announced prior to January 1. Applications submitted by February 1, and manuscripts submitted by April 1 of the academic year. Approximate value: $500.

The Exchange Club of Charleston Scholarships are given each year to one or two outstanding students from Charleston County. Value: $500 to $1,000.

The First Field Artillery Brigade, A.E.F., and the Fifth Field Artillery Scholarships pay $2,000 a year for four years. They were established in 1934 by the late Colonel Robert R. McCormick of Chicago and are limited to candidates from the State of Illinois.

Greenville-Piedmont Citadel Club Scholarship, with a value of $300 a year, is given annually to an outstanding young man from the Greenville area.

The Chester E. Hatch, Jr., Memorial Scholarships were established by the widow of Mr. Hatch, Class of 1937. They pay $500 a year to one junior and one senior majoring in chemistry.

Thomas Jefferson Political Science Scholarship has a value of $500 and is awarded each year to an outstanding senior majoring in political science. This scholarship is awarded by the National Society, Southern Dames of America.

The Lewie G. and Grace M. Merritt Scholarship was established by Mrs. Merritt in memory of her husband, General Lewie G. Merritt, Class of 1917. It pays $500 a year.

The Mullen Premedical Scholarships, established by Dr. Donald C. Mullen, Class of 1957, have a value of $500 a year to one junior and one senior dedicated to becoming physicians.

President's Honorary Scholarships. Each year Lieutenant General George M. Seignious, II, gives several scholarships to outstanding high-school graduates and outstanding members of the current junior, sophomore, and freshman classes of The Citadel. Each scholarship has a value of $200.

The South Carolina Electric and Gas Company Scholarship is $750 awarded to an outstanding student from South Carolina.

The Spivey Memorial Scholarship pays $2,400 a year for four years. It is restricted to entering freshmen from Horry County, South Carolina, who have financial need.

The General Holmes B. Springs Memorial Scholarship was established by Dr. Holmes B. Springs, Jr., in memory of his father, who was a member of the Class of 1898. This award pays $500 to a worthy young man who has financial need.

Vandiver-Sullivan Scholarship has a value of $500 a year. The recipients are limited to residents of Anderson County. This award was established by Mr. David S. Vandiver, Class of 1931, and Mr. Marcus M. Sullivan, Class of 1929, of Anderson, South Carolina.

The West End Dairy Scholarships were established in 1964 by Mr. Greswold Gwynette, Class of 1936, and pay $200 to $300 a year.

Category IV

There are numerous scholarships of this type. Applicants must apply directly to the individual or organization donors.

Financial Aid

Loans and Grants

The Citadel participates in the National Direct Student Loan, Supplemental Educational Opportunity Grant, Basic Educational Opportunity Grant, College Work-Study Program, and the Guaranteed Loan Program. To be eligible for aid through these programs a student must be accepted for admission to The Citadel. In awarding aid under these or other programs there is no discrimination because of race, creed, color, or national origin.

National Direct Student Loans

Both currently enrolled students and new students who have been accepted for admission may apply for these loans. To be eligible for favorable consideration, applicants must establish financial need and give evidence of likely academic success.

To assist them in determining financial need, The Citadel Financial Aid Committee requires the parents of all applicants to complete the Financial Aid Form (FAF) published and analyzed by the College Scholarship Service, Princeton, New Jersey 08540. The Citadel is one of the colleges holding membership in the College Scholarship Service.

A qualified student with demonstrated financial need may normally borrow up to $1,000 per academic year. The interest rate of 3 per cent is charged on these loans after the repayment period begins (nine months after the student ceases to attend an institution of higher learning). If he enters the armed forces, Vista, or the Peace Corps, he may apply for a deferment of payment, and his repayment begins at the conclusion of his deferment period. If the student enters certain teaching fields or serves in an area of hostilities with the armed forces, his loan may be cancelled on a scheduled basis. A minimum repayment of $30 per month will be required. Repayment of a National Direct Student Loan is made to Wachovia Services, Inc., P.O. Box 3176, Winston-Salem, N.C. 27102.

Supplemental Educational Opportunity Grant Program

The Citadel participates in the Supplemental Educational Opportunity Grant Program as established under Title IV, Part A, of The Higher

Education Act of 1965, Public Law 89-319, as amended. This program provides assistance to eligible qualified high school graduates of exceptional financial need who for lack of financial means of their own or their families would be unable to enter or remain in college. Since Supplemental Educational Opportunity Grants must be equally matched, The Citadel uses the National Direct Student Loan, College Work-Study, Basic Educational Opportunity Grant, and/or other institutionally controlled aid as matching funds.

Grants will be awarded to a student who:

—is a national of the United States, or is in the United States for other than a temporary purpose and intends to become a permanent resident thereof;

—has been accepted for enrollment as a full-time undergraduate student, or is in good standing and in full-time attendance as an undergraduate student;

—shows evidence of academic or creative promise and capability of maintaining good standing in his course of study;

—has exceptional financial need, as determined by the institution in accordance with criteria and schedules prescribed by the commissioner taking into account such factors as the number of dependent children, income and assets of the student's family;

—without the assistance of a Supplemental Educational Opportunity Grant would be unable to pursue a course of study at an institution of higher education.

Basic Educational Opportunity Grant Program

The Basic Educational Opportunity Grant Program is the newest of the federally funded educational programs. A student demonstrating financial need will be entitled to a grant ranging from $200 to $1,600. Entering students should contact their high schools for detailed information. Presently enrolled students should contact the Financial Aid Office. All students who apply for aid must also apply for the Basic Educational Opportunity Grant. Application can be made by checking item 83 of the Financial Aid Form.

College Work-Study Program

Students, particularly those from low income families, have an opportunity to earn part of their college expenses. Work program makes jobs available to students at a rate of $2.65 an hour, maximum 20 hours a week. Payment will be bimonthly. Pay will be deposited to the student's account each pay period.

The Guaranteed Loan Program

South Carolina Student Loan Corporation (In-State-Students)

A South Carolinian, through this program, may borrow up to $1,500 a year to be used towards the expenses of a post-secondary education. Families with adjusted gross incomes below $25,000 a year will qualify for federal interest subsidy while the student is in school. For information and application write: South Carolina Student Loan Corporation; Dutch Plaza, Suite 233; 800 Dutch Square Boulevard; Columbia, South Carolina 29210. Application must be filed no later than July 1.

State Guaranteed Loans (Out-of-State Students)

Because of the diversity in regulations governing the program, students and parents interested in their state program are urged to write for information to the State Board of Education, Higher Education Assistance Authority, or similar agency in their home states. Applications may require certification of the student's need. Thus each applicant whose adjusted family income is $25,000 or over must complete a Financial Aid Form (FAF).

George M. and Texie A. Young Stackhouse Memorial Loan Fund

The generosity of the trustees, Hazel S. Stackhouse, Dr. Carl P. Parker, Jr., and the late Will Stackhouse, Jr., who served the trust faithfully during his lifetime, has made it possible to establish the George M. and Texie A. Young Stackhouse Memorial Loan Fund.

Through this program, loans will be made to needy, deprived, and deserving students. The interest rate is 6 per cent simple and repayment begins six months after graduation or after disenrollment from the college for any reason. A minimum repayment of $30 will be required. Loans will be secured with a note and the signing of the American Creed which pledges loyalty to the United States.

Citadel Development Foundation Loan

Through The Citadel Development Foundation, money is made available for a number of loans each year. These loans are made to students who are financially needy. The interest rate is 6 per cent simple and repayment begins six months after graduation or after disenrollment from the college for any reason. A minimum repayment of $30 will be required. Loans will be secured with a note.

ROTC Scholarships

Army, Naval, and Air Force ROTC scholarships, which cover tuition, college fees, books, and supplies, plus $100 a month, are available to high school seniors. Application should be made early in the senior year of high school preferably by October 30. For further information, write the appropriate military department at The Citadel. Students who are awarded ROTC scholarships should see pages 64-66 of the expense section which concerns financial arrangements.

Veterans' Benefits

Veterans and the children of deceased or disabled veterans who meet regular admission requirements may be eligible for educational benefits under Public Laws 894, 87-815, or 643. Preliminary application for such benefits must be made to the nearest Regional Office of the Veterans Administration well in advance of the anticipated admission date so that the necessary details and documents may be obtained. One should notify The Citadel's Veterans Affairs Office of his intent to enroll and request that his attendance be certified with the VA.

It is the veteran's responsibility to notify both the VA Regional Office and Veterans Affairs Office of any change in his program. Also, it is the veteran's responsibility to certify his class attendance to the Veterans Affairs Office during the week of the 25th of each month. This is accomplished by completing a certification card available at Room 128, Bond Hall. Failure to turn in a card on time will terminate benefits.

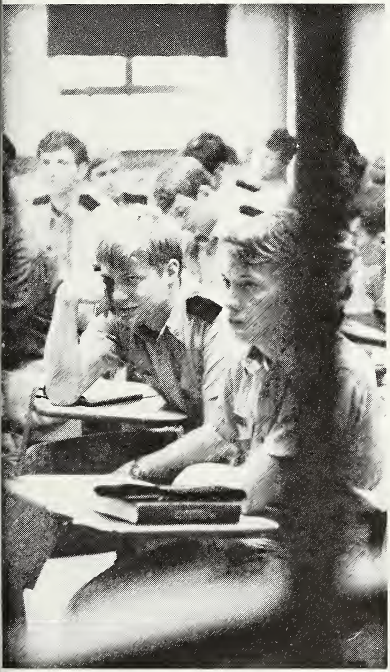
Under new VA regulations, a student must be making normal progress toward completion of his degree. Because of this, any student receiving VA benefits who withdraws from a course after the free drop period will be given a punitive grade for the course.

Commercial Loan Programs

For parents who prefer to pay their educational expenses in monthly installments, names and information on private loan plans will be forwarded upon request.

Financial Need

For programs which require that financial need be determined. The Citadel requires parents of all applicants to complete and submit a confidential Financial Aid Form (FAF) to the College Scholarship Service, Box 2700, Princeton, New Jersey 08540.



Entering freshmen should obtain the Financial Aid Form througl their local high schools. Cadets should direct their requests to the Financial Aid Office.

Application Deadline

All aid applications for the academic year beginning in August shoul be in the Financial Aid Office by March 15. Those received after thi date will be considered as to date received and availability of funds.

Information and Applications

Further information about financial aid programs at The Citadel an application forms should be requested from the Financial Aid Office The Citadel, Charleston, S.C. 29409.

Information on Student Attrition

Students wishing information on student attrition may contact the registrar.

Information on Employment and Starting Salaries

Students wishing information on employment and starting salaries of graduates may obtain this information from the Alumni and Placement Office.

Sample Repayment Schedules

NATIONAL DIRECT STUDENT LOAN

Principal Amount = $1,000
Interest Rate = 3 per cent
Payments per year = 4

Number of Payments	Principal Balance	Interest	Principal Payment	Payment
1	$1,000.00	$ 7.50	$ 82.50	$ 90.00
2	917.50	6.88	83.12	90.00
3	834.38	6.26	83.74	90.00
4	750.64	5.63	84.37	90.00
5	666.27	5.00	85.00	90.00
6	581.27	4.36	85.64	90.00
7	495.63	3.72	86.28	90.00

8	409.35	3.07	86.93	90.00
9	322.42	2.42	87.58	90.00
10	234.84	1.76	88.24	90.00
11	146.60	1.10	88.90	90.00
12	57.70	0.43	57.70	58.13
	Totals	$48.13	$1,000.00	$1,048.13

CITADEL DEVELOPMENT FOUNDATION AND STACKHOUSE LOANS

Principal Amount = $500
Interest Rate = 6 per cent
Payments per year = 12

Number of Payments	**Principal Balance**	**Interest**	**Principal Payment**	**Payment**
1	$500.00	$ 2.50	$ 27.50	$ 30.00
2	472.50	2.36	27.64	30.00
3	444.86	2.22	27.78	30.00
4	417.08	2.09	27.91	30.00
5	389.17	1.95	28.05	30.00
6	361.12	1.81	28.19	30.00
7	332.93	1.66	28.34	30.00
8	304.59	1.52	28.48	30.00
9	276.11	1.38	28.62	30.00
10	247.49	1.24	28.76	30.00
11	218.73	1.09	28.91	30.00
12	189.82	0.95	29.05	30.00
13	160.77	0.80	29.20	30.00
14	131.57	0.66	29.34	30.00
15	102.23	0.51	29.49	30.00
16	72.74	0.36	29.64	30.00
17	43.10	0.22	29.78	30.00
18	13.32	0.07	13.32	13.39
	Totals	$23.39	$500.00	$523.39

Department of Student Activities

Student activities are those in which students are involved when outside the classroom. Their purpose is to provide for each student the choice of engaging in one or more of the sponsored activities in order to broaden his talents in areas of his liking and capability.

Mark Clark Hall

The department's offices and many of the student activities are housed in Mark Clark Hall, which serves as the student union building. Named after General Mark W. Clark, president emeritus, it has been in use since 1958.

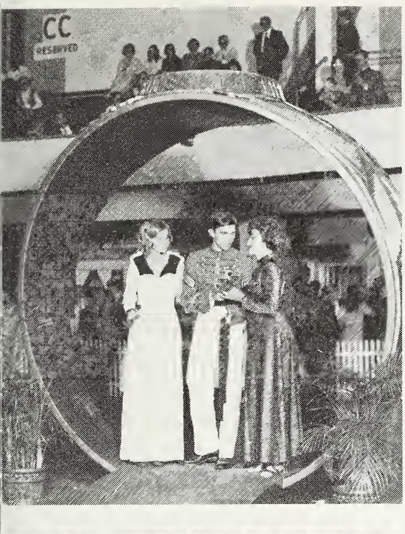
On the first floor are a reception room, canteen, barber shop, post office, bowling alleys, and a billiard room. The department's offices are on the second floor, along with the alumni office, an auditorium, the alcove lounge, a kitchen, a lounge and club room, and three reading rooms. On the third floor are staff workrooms for the student publications, the Catholic chaplain's office and chapel, the honor court room, a photographic darkroom, and nine guest bedrooms.

The Beach Club

The Colonel Robert R. McCormick Beach Club is on the Isle of Palms, about a half hour's drive from the campus. It is a functional two-story club house, built on a five-acre tract overlooking the Atlantic Ocean. Quarters are provided for the resident custodian, in addition to bathhouses, a large lounge, kitchen, and screened porch. Outside barbecue and grill areas are provided, as well as shuffleboard courts and horseshoes. The grounds are floodlighted to facilitate evening parties. Food and beverages are sold on weekends at the Beach Club.

Citadel Servicenter

The Servicenter, which is across the street from the front of McAlister Field House, offers a full range of Exxon products at prices equal to or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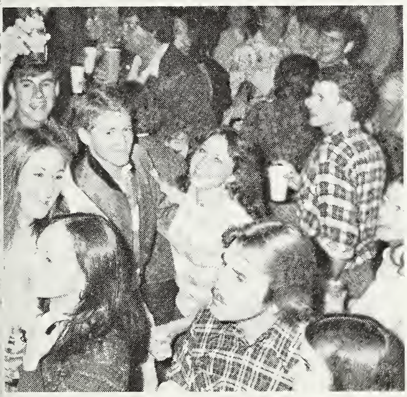


lower than others in the city. It is available to all students, faculty, staff, and their families.

The College Hostess

The Citadel hostess serves as social advisor for students. Her office is located in the reception room of Mark Clark Hall. Under her supervision, dancing classes are conducted and informal social mixers are held in the auditorium on weekday afternoons. At times of formal hops, she arranges for overnight accommodations in private homes for the ladies from out of town. She keeps the reception room open and maintained in good taste for the use of cadets and their guests from 9 a.m. until 5 p.m. daily. The hostess serves the students by discussing solutions of their personal problems.

The Fine Arts Series

Inaugurated in 1965, the Fine Arts Series has presented annually a wide variety of programs which have been both entertaining and instructive. There are usually five programs presented during the academic year. Included among past performances have been opera singers, musical ensembles and soloists, traditional dance groups from around the world, Shakespearean plays, and classical dramatic presentations.

Social Events

All Citadel dances are under the sponsorship of the Standing Hop Committee, an organization selected from the three upper classes. Its duties are to set dates for the dances, provide bands, and coordinate all plans for the hops.

Citadel hops are the highlights of the social activities of the college. As dances are strictly for and by students, few invitations are issued to civilians. The formal hops held annually are the Homecoming Hop, First Class Ring Hop, and the Corps Day Hop. Although these dances are formal, by tradition corsages are not worn by dates.

Publications

The Brigadier, published weekly by a staff of students, serves as the campus newspaper.

The Sphinx, the college yearbook, is published annually by a staff of students. This publication serves as a semi-official record of the year.

The Shako, the literary magazine, is published three times a year.

The Guidon, the cadet handbook, is published annually by a staff of cadets. The handbook contains a complete description of the activities of the college, college history, customs, and duties and responsibilites of cadets, plus other phases of cadet life. It is particularly helpful to entering freshmen. It is mailed to incoming freshmen early in the summer and distributed to other students at the beginning of the college year.

The Student Directory, published in the fall of each year by a student staff of Alpha Phi Omega, lists names and home addresses of all students at the college.

Financed by allocations from student activities fees, all publications are distributed to all students at no additional charge.

Musical Organizations

The cadet orchestra, known as "The Bulldogs," furnishes music for informal dances.

The Citadel Cadet Chapel Choir serves as the choir at Protestant chapel services and gives programs in Charleston churches. The Catholic and Episcopal groups have their own choirs.

The Citadel Band provides music for parades, reviews, and other official ceremonies. The Citadel Bagpipers are an integral part of the Band.

The Yacht Club

The Citadel Yacht Club membership consists of all members of the student body, faculty, and staff. There are no dues connected with the membership, and preference is given to students in the use of the club facilities.

The club fleet consists of a 54-foot cabin cruiser, small sailboats, and outboard motorboats, all available to students.

Yacht Club facilities consist of a club house, dockage, marine railway, sail loft, work area for maintenance and repair of small boats, and boat storage for a small fee.

Clubs and Societies

Membership in a wide variety of clubs, societies, and other organizations is available to all students. Among those are literary and discussion groups, professional societies, military organizations, and recreational clubs. The span of these activities is so broad and so varied that every student may find an organization that fits his interests and talents.

Department of Intercollegiate Athletics

The mission of the Department of Athletics at The Citadel is to develop, maintain, and continue to improve a well-rounded program of athletics geared to the aims and objectives of The Citadel, the Southern Conference, and the National Collegiate Athletic Association.

The Citadel is a member of the NCAA with Division I classification. In addition, the college is a member of the Southern Conference, which is comprised of Appalachian State University, The Citadel, Davidson, Furman University, Marshall University, University of Tennessee at Chattanooga, Virginia Military Institute, and Western Carolina University.

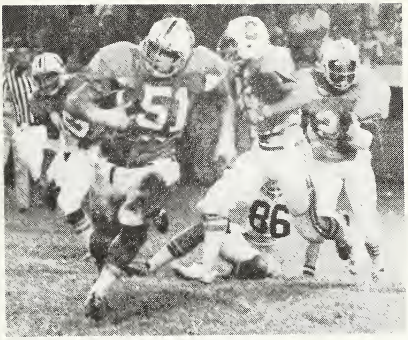
The Sports Program

Entrusted with young men at a critical stage of their development, the college seeks to provide wholesome activities, services, and facilities which will contribute to the development in its students of character, physical fitness, and moral and religious principles, thereby preparing them to meet the requirements of citizens and especially of leaders.

The Citadel athletic program offers opportunities for competition in all sports in which the Southern Conference declares champions. Competent and qualified coaches are employed, adequate facilities are maintained, and well-equipped and supervised trainers and training facilities are provided to achieve these aims. A well-balanced, diversified program is provided within the framework of the educational program as a whole.

In Southern Conference competition, The Citadel has established a winning tradition and has maintained accumulative winning records which annually place cadet teams in the upper division of conference standings. Through the years, the list of All-State, All-Conference, and All-American selections has been impressive.

The Department of Intercollegiate Athletics sponsors 12 varsity teams and freshman teams in football and basketball. A cadet-athlete can choose to compete in football, basketball, cross-country, soccer, rifle shooting,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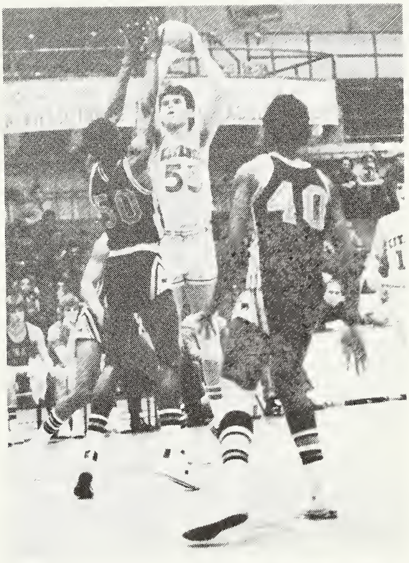
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wrestling, swimming, indoor track, outdoor track, baseball, golf, and tennis. Each year, more than 600 cadets participate as players, managers, or student trainers.

The Citadel, under NCAA and conference regulations, maintains a grant-in-aid program which helps keep cadet teams competitive in the Southern Conference.

Facilities

Athletic facilities at The Citadel are among the best in the conference. Home football and soccer games are played in Johnson Hagood Stadium, which seats more than 22,000 spectators. McAlister Field House, seating approximately 5,000, provides a modern facility for home basketball games. Other indoor facilities include an indoor rifle range, a well-equipped wrestling practice area, and an Olympic-size swimming pool.

Outdoor facilities for practice and competition include six all-weather composition and four Laykold tennis courts, a quarter-mile track, and four practice fields for football and soccer.

Baseball games are played in College Park baseball field, a large lighted baseball stadium adjacent to The Citadel campus.

All facilities, maintained by The Citadel Grounds Department, are available for physical education classes and intramural sports when not in use by varsity teams.

Coaching Personnel

All intercollegiate teams are handled by experienced and competent coaches, many of whom teach in various other departments of The Citadel. A head trainer for all teams works closely with the college surgeon, supervising the practice and competition for varsity and freshman teams.

Honors and Awards

The Palmetto Award

The award is made by the Board of Visitors in recognition of exceptional performance which reflects great credit on The Citadel or the State of South Carolina. It is to be made to a member of the Corps of Cadets, alumni, faculty, or staff of The Citadel, or any other person whose service to the college or state is deemed worthy of consideration. Members of the Board of Visitors, the president of The Citadel, or the Association of Citadel Men may take nominations for candidates for this award, but recipients must be unanimously approved by the Board of Visitors. This award takes precedence over all other honors awarded by The Citadel with the exception of honorary degrees.

Commencement Honors

Commencement academic honors are restricted to those graduates who have earned (and are employing to satisfy graduation requirements) a minimum of 90 semester hours at The Citadel.

If 12 or more semester hours have been attempted at other institutions, a cumulative grade-point ratio of no less than 3.2 (4.0 scale) must have been earned at those institutions.

Transfer credits earned at other institutions will be incorporated into the student's grade-point average only for the determination of academic honors. (Transfer credits otherwise are excluded in the determination of the grade-point ratio for other purposes.)

The Algernon Sydney Sullivan Awards are bronze medallions presented by the college, through the benefaction of the New York Southern Society, to students or others in recognition of high thought and noble endeavor. Established by the Society of 1925, the awards have been made to The Citadel since 1933.

The John O. Willson Ring.—The bequest of Dr. John O. Willson, a ring is given annually to the cadet member of the senior class voted by his classmates as the manliest, purest, and most courteous member of his class.

The Scholarship Medal is presented annually by the Board of Visitors to the student graduating with the highest grade-point ratio in his class.

General High Honors are awarded to those students in the graduating class who have achieved an average academic standing for the four years of a grade-point ratio of 3.60 or higher.

General Honors are awarded to those students who have achieved an average academic standing for the four years of a grade-point ratio of between 3.50 and 3.59, inclusive.

Departmental Honors are awarded on recommendation of heads of departments to those students of the graduating class who have established a grade-point ratio of 3.50 or better in at least 36 hours work in their major department. This must include all departmental work required in the junior and senior years.

The Citadel Honorary Society. Membership in The Citadel Honorary Society is limited to members of the first class whose standing is in the upper 8 per cent of their class.

Academic Honors and Awards

The Dean's List is a recognition given to those students registered for 12 or more semester hours whose grade-point ratio is 3.20 or higher, with no grade below C, for the work of a semester. Medals are awarded and worn on uniforms the following semester.

Gold Stars are awarded to those students on the Dean's List who have made a grade-point ratio of 3.70 or higher for the work of a semester. Stars are worn on the collar of the uniform during the following semester.

The American Legion ROTC Scholastic Excellence Awards are presented to Army, Navy, and Air Force ROTC firstclassmen and secondclassmen who have demonstrated outstanding scholastic excellence.

The Francis Marion Award is presented by the Rebecca Motte Chapter, D.A.R., to a cadet of the graduating class for outstanding achievement in American history.

The Granville T. Prior Award consists of key and scroll presented annually by The Citadel History Club to the student whose senior research project is selected by a joint faculty committee as the best in the Departments of English, History, and Political Science.

William E. Mikell Award, a cash award donated by the late William E.

Mikell, is awarded to that member of the graduating class having the highest average in English over a three-year period.

The Wall Street Journal Student Achievement Award is donated by the *Wall Street Journal* and awarded to the student having the greatest achievement in business administration during the school year.

The Charles P. Summerall Cup is donated by the European Citadel Association and awarded annually for one year to the company of cadets with the best academic achievement. Companies are rated on the average grade-point ratio (GPR) for each semester plus a factor to reflect the increase or decrease in GPR from first to second semester.

Post-Courier Awards are given by the Post-Courier to the best writers on *The Brigadier* staff as chosen by a committee of faculty and staff members.

The Peter Gaillard Memorial Award is given annually by Colonel and Mrs. St. Pierre Gaillard in memory of Peter Gaillard of the Class of 1948 to a graduating firstclassman majoring in electrical engineering on a basis of scholastic attainment, leadership, and participation in extracurricular activities.

The Charles T. Razor Memorial Award is given annually in memory of Colonel Charles T. Razor to a graduating cadet selected by the head of the Department of Electrical Engineering on the basis of scholastic achievement, ability, and willingness to help others.

The Colonel Louis Shepherd LeTellier Award is given annually to a member of the graduating class attaining the highest academic average in civil engineering.

The George Walker White Award is given annually by Mrs. James Boyd Strawn and Mrs. Robert Neal Garrison in memory of their father, Class of 1904. This award goes to a member of the graduating class for outstanding achievement in civil engineering.

The Colonel Christopher Schulz Gadsden Memorial Award, in memory of Colonel Gadsden, Class of 1852, is given annually to the "best all-round civil engineering graduate" as selected by the civil engineering faculty.

The Reuben Burton Pitts, III, Memorial Award is given annually in memory of Cadet Reuben Burton Pitts, III, Class of 1963, to the secondclassman who is selected by his classmates as showing the greatest concern for the well-being of other cadets.

The Carlisle Norwood Hastie Award is given annually to the graduating firstclassman who has been selected by his classmates as having shown the most tact, consideration, and courtesy to his fellow students.

The Henry J. Taylor Cup is presented annually to the member of *The Brigadier* staff who has demonstrated the greatest journalistic improvement during the current school year.

The Colonel James K. Coleman Award is in honor of Colonel Coleman, Class of 1919, who established the Department of Political Science at The Citadel. It is given annually by Pi Sigma Alpha, National Political Science Honor Society, to the firstclassman in political science with the highest scholastic record for the four years.

The H. L. Gary Award, consisting of a cash award and a certificate of recognition, is granted annually to a graduating senior for outstanding achievement in European history.

The English Faculty Award: a cash award and a scroll given by the members of the English Department to an English major who, during an academic year, has submitted an essay, short story, or poem, of exceptional merit.

The George E. Reves Award is given annually in honor of Colonel George E. Reves. The award, consisting of a suitably inscribed desk plaque for the recipient and the listing of the recipient's name on a plaque in the Mathematics Department, is given to the mathematics major selected by the mathematics faculty on the basis of mathematical ability and outstanding achievements.

Military Awards

The Order of Cincinnati Award is presented annually to a cadet officer who has exemplified in the highest degree the qualities of soldier and citizen.

The Wade Hampton Saber is awarded annually by the South Carolina Division, Daughters of The Confederacy, to the member of the first class who is most outstanding in leadership and who makes the greatest contribution to The Citadel while a cadet.

Army ROTC Distinguished Military Student Program—Army ROTC students whose proficiency in military training and whose qualities of leadership and attention to duty have merited the approbation of the professor of military science are designated Distinguished Military Students. They are eligible to apply for appointment as second lieutenants in the Regular Army when they have registered for their last academic year.

The 103rd Field Artillery Award was established by the veterans' organization of that regiment as a trophy to be won each year by the company of cadets which has attained the best record of discipline in the Corps of Cadets.

The Association of U.S. Army Medal is donated by the Association of the United States Army and awarded annually to the outstanding Army ROTC secondclassman.

The Widder Award is presented annually by Mr. and Mrs. John D. Widder, in memory of their son, Capt. David John Widder, USA, Class of 1959, to the outstanding Distinguished Military Student in Army ROTC.

The Washington Light Infantry Marksmanship Trophy and Medals consists of a trophy awarded annually for one year to the organization whose team makes the highest score in smallbore rifle marksmanship; medals to the cadets making the highest individual scores. All are presented by the Washington Light Infantry.

Distinguished Naval Students—During the fall semester each year the professor of naval science designates as Distinguished Naval Students (DNS) those senior cadets in the Naval ROTC program who have displayed outstanding qualities in academics, leadership, adaptability to military training, and sound moral character.

The United States Naval Institute Awards consist of a membership certificate in the Naval Institute for a one-year period awarded to an outstanding NROTC regular cadet in the senior class and to an outstanding NROTC contract cadet in the senior class.

The Marine Corps Association Award consists of a certificate and membership in the Association for a one-year period awarded to the outstanding junior or senior Marine-option cadet who has displayed the highest qualities of perseverance, integrity, motivation, and devotion to duty.

The Navy League Sword is awarded annually by the Navy League to the most outstanding cadet to be commissioned in the U.S. Navy or U.S. Marine Corps.

Air Force ROTC Distinguished Graduates—The professor of aerospace studies may designate as Distinguished Graduates those Air Force cadets who possess outstanding qualities of leadership and have demonstrated those qualities both in their academic classwork and military activities. This designation is a factor that is considered for appointment in the Regular Air Force during the early years of the junior officer's career.

The Air Force Association Award is presented each year to the outstanding first class AFROTC cadet possessing outstanding leadership characteristics.

The General Dynamics AFROTC Cadet Award is donated by Convair Division to a sophomore who has demonstrated outstanding qualities in the AFROTC program.

Air Force Times Award of Merit is awarded annually to a graduating Air Force ROTC cadet who has distinguished himself by contributing materially to constructive public attention for the Cadet Corps.

The Roland F. Wooten Trophy is presented annually to the outstanding graduating cadet in the pilot category. The late Major Wooten, the most decorated airman from South Carolina, was a 1936 Citadel graduate and a leading citizen from Charleston. The award is based on performance in the flight instruction program.

The American Fighter Aces Award is presented annually to the outstanding graduating cadet in the pilot category in each geographical AFROTC area. It is based on his performance and achievement as an AFROTC cadet.

The American Legion Army, Navy, and Air Force General Military Excellence Award is presented annually to a cadet in each of the first and second classes who has demonstrated outstanding qualities of military leadership, discipline, character, and citizenship.

The National Defense Transportation Association Award is presented annually to an outstanding ROTC firstclassman majoring in business administration, civil engineering, or political science.

The Society of American Military Engineers Award is awarded annually to a member of the first and second class who is majoring in engineering and has demonstrated outstanding academic achievements.

The South Carolina Reserve Officers Association Awards are donated annually by the Reserve Officers Association and awarded to the outstanding Army, Navy, and Air Force ROTC first, second, and third class cadets for demonstrating courtesy, personal attributes, positive attitude, and promotion potential.

The Daughters of the American Colonists Award is given annually to the firstclassman with the best disciplinary record during his four years at The Citadel.

The Armed Forces Communications and Electronics Association Awards are awarded annually to the outstanding Army, Navy, and Air Force ROTC first and second class cadets majoring in engineering, mathematics, chemistry, and physics.

Sons of the American Revolution Awards are awarded annually to outstanding Army, Navy, and Air Force fourthclassmen on the basis of leadership ability, soldierly bearing, and excellence in ROTC studies and activities.

The Daughters of the American Revolution ROTC Award is presented annually to an outstanding graduating ROTC cadet selected for academic excellence, leadership ability, adherence to military discipline, dependability and good character, and a fundamental and patriotic understanding of the importance of ROTC training.

The Major William M. Hutson Award is presented annually by Colonel and Mrs. J. C. Hutson in memory of their son, Major William M. Hutson, USAF, Class of 1939, to a rising senior selected for outstanding leadership ability, academic standing, and devotion to duty.

The Commandant's Cup, donated by the late Colonel W. C. Miller, is awarded annually to the best-drilled company.

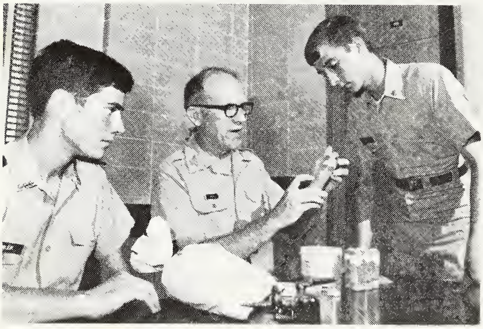
The W. C. White Medal is presented annually by Mrs. W. C. White to the company commander of the best-drilled company.

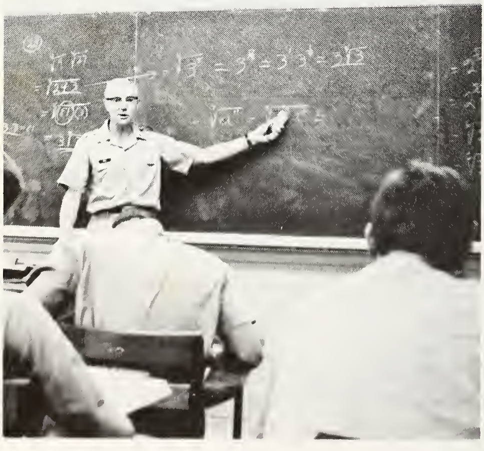
The Kelly Cup, in memory of Captain Benjamin E. Kelly, Jr., USA, Class of 1961, is awarded annually to the squad winning the squad drill competition.

The Star of the West Medal, originally presented to The Citadel by Dr. B. H. Teague, is awarded annually to the best-drilled cadet.

Other Awards

The list of awards above is not complete, but space precludes a full listing. Many other awards are given in recognition of military and scholastic excellence, as well as meritorious participation in cadet activities and athletics.





Courses of Study

The following pages contain a detailed schedule of the curriculum required for each degree according to the major subject elected. The clock hours and the credit value of each course are noted. The individual courses are described under the appropriate departmental heading in the pages following the schedules.

The geology courses are offered in the Department of Chemistry; the fine arts in the Department of Education; philosophy in the Department of English; computer science in the Department of Mathematics; and sociology and anthropology in the Department of Political Science.

The courses of the fourth class are numbered from 101 upward, of the third class from 201 upward, of the second class from 301 upward, and of the first class from 400 upward.

The course of study is essentially the same for most freshmen except for those in the science or engineering majors, who are required to take 40-101 and 40-102 (General Chemistry), and may be required to take some courses in the particular department of specialization. Certain subjects are required in the sophomore year of all students, the remaining subjects being determined by the course which the student chooses to follow during his junior and senior years. Major work is offered in the following departments: Biology, Business Administration, Chemistry, Civil Engineering, Education, Electrical Engineering, English, History, Mathematics, Modern Languages, Physical Education, Physics, Political Science, and Psychology. A thorough premedical program is also available in the B.A. Chemistry and the Biology majors.

BIOLOGY MAJOR
First Semester

FRESHMAN YEAR—

Composition and Literature	80-101	3	(3,0)*
General Chemistry	40-101	3	(3,0)
General Chemistry Laboratory	40-111	1	(0,2)
††Pre-Calculus Mathematics, or	30-103	3	(3,0)
Introductory Calculus	30-201		
Orientation in Biology	47-100	1	(1,0)
Introduction to Zoology	47-104	4	(3,2)
†1st Year Basic ROTC			
RPE		0	(0,2)

SOPHOMORE YEAR—

Major British Writers	80-201	3	(3,0)
Organic Chemistry	40-207	3	(3,0)
Organic Chemistry Laboratory	40-217	1	(0,3)
A Modern Language		3	(3,0)
Physics for Biology and Premedicine	26-205	4	(3,2)
Biology Elective		3 (4)	
†2nd Year Basic ROTC			
RPE		0	(0,1)

JUNIOR YEAR—

Physics for Biology and Premedicine	26-207	4	(3,2)
A Modern Language		3	(3,0)
Elective		3	(3,0)
Biology Elective		3 (4)	
†1st Year Advanced ROTC			

SENIOR YEAR—

Biology Elective		3 (4)	
Elective		3	(3,0)
Elective		3	(3,0)
Elective		3	(3,0)
Elective		3	(3,0)
†2nd Year Advanced ROTC			

The B.S. Biology major requires at least 30 credits in biology. Courses 47-103, 47-104, and 47-411 are required of all majors. The seven remaining electives should include at least one course from each of the following areas: *Physiology:* 47-403, 47-404, 47-413; *Field Biology:* 47-314, 47-321, 47-406, 47-408, 47-409, 47-410; *Developmental Biology:* 47-208, 47-308, 47-401; and at least two courses from *Descriptive Biology:* 47-205, 47-301, 47-302, 47-307, 47-310, 47-312, 47-315, 47-316, 47-202, 47-405, 47-418, 47-419. It is recommended that each biology major take at least one advanced botany and one advanced zoology course. Other requirements are listed above. The modern language shall be Spanish, French, German, or Russian.

*Represents semester hour credits lectures, and laboratory hours in that sequence.

††Students well founded in algebra and trigonometry are encouraged to substitute 30-201 and 30-202.

BIOLOGY MAJOR
Second Semester

FRESHMAN YEAR—

Composition and Literature	80-102	3	(3,0)
General Chemistry	40-102	3	(3,0)
General Chemistry Laboratory	40-112	1	(0,2)
††Finite Mathematics, or	30-104	3	(3,0)
Introductory Calculus	30-202		
Introduction to Botany	47-103	4	(3,2)
†1st Year Basic ROTC			
RPE		0	(0,2)

SOPHOMORE YEAR—

Major British Writers	80-202	3	(3,0)
Physics for Biology and Premedicine	26-206	4	(3,2)
Organic Chemistry	40-208	3	(3,0)
Organic Chemistry Laboratory	40-218	1	(0,3)
A Modern Language		3	(3,0)
A Survey of American History	70-101	3	(3,0)
†2nd Year Basic ROTC			
RPE		0	(0,1)

JUNIOR YEAR—

A Survey of American History	70-102	3	(3,0)
A Modern Language		3	(3,0)
Elective		3	(3,0)
Biology Elective		3 (4)	
Biology Elective		3 (4)	
†1st Year Advanced ROTC			

SENIOR YEAR—

Public Speaking	80-205	3	(3,0)
Biology Elective		3 (4)	
Senior Seminar	47-411	1	(1,0)
Elective		3	(3,0)
Elective		3	(3,0)
**Senior Research Project, or	47-420	3	
Biology Elective		3 (4)	
†2nd Year Advanced ROTC			

HOURS REQUIRED FOR GRADUATION: 122 plus successful completion of 8 semesters of ROTC.

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†ROTC hours (credit, lecture and/or lab) may vary each semester by military department; however, the total hours applied toward graduation requirements may not exceed 16 semester hours, exclusive of FIP, without the approval of the department head and the vice president for academic affairs.

**Prerequisite is approval by department head and supervising professor.

BUSINESS ADMINISTRATION MAJOR

First Semester

FRESHMAN YEAR—			
Composition and Literature	80-101	3	(3,0)*
Biology, Chemistry, or Physics		4	(3,2)
††Pre-Calculus Mathematics	30-103	3	(3,0)
A Survey of American History	70-101	3	(3,0)
A Modern Language		3	(3,0)
†1st Year Basic ROTC			
RPE		0	(0,2)
SOPHOMORE YEAR—			
Major British Writers	80-201	3	(3,0)
A Modern Language		3	(3,0)
Economic Origins and Principles	5-201	3	(3,0)
**American National Government	60-201	3	(3,0)
Accounting Principles and Practice I	5-211	3	(2,2)
†2nd Year Basic ROTC			
RPE		0	(0,1)
JUNIOR YEAR—			
Intermediate Accounting I	5-300	3	(2,2)
**Business Law I	5-305	3	(3,0)
**Principles of Labor	5-307	3	(3,0)
**Marketing Principles	5-309	3	(3,0)
Business Finance I	5-321	3	(3,0)
†1st Year Advanced ROTC			
SENIOR YEAR—			
Marketing Management	5-405	3	(3,0)
Money and Banking	5-407	3	(3,0)
Approved Non-Business Elective		3	(3,0)
Departmental Elective		3	(3,0)
**Departmental Elective		3	(3,0)
†2nd Year Advanced ROTC			
DEPARTMENTAL ELECTIVES—			
Business Statistics II	5-206	3	(3,0)
Intermediate Accounting II	5-301	3	(2,2)
General Insurance	5-308	3	(3,0)
International Trade	5-310	3	(3,0)
Intermediate Microeconomic Theory	5-313	3	(3,0)
Intermediate Macroeconomic Theory	5-314	3	(3,0)
Communicating in Business	5-316	3	(3,0)
Business Law II	5-318	3	(3,0)

*Represents semester hour credits, lectures, and laboratory hours in that sequence.

**May be taken in either semester.

†ROTC hours (credit, lecture and or lab) may vary each semester by military department; however the total hours applied toward graduation requirements may not exceed 16 semester hours, exclusive of FIP, without the approval of the department head and the vice president for academic affairs.

††Students well founded in algebra and trigonometry are encouraged to substitute 30-201 and 30-202

BUSINESS ADMINISTRATION MAJOR

Second Semester

FRESHMAN YEAR—

Composition and Literature	80-102	3	(3,0)
Biology, Chemistry, or Physics		4	(3,2)
††Finite Mathematics	30-104	3	(3,0)
A Survey of American History	70-102	3	(3,0)
A Modern Language		3	(3,0)
†1st Year Basic ROTC			
RPE		0	(0,2)

SOPHOMORE YEAR—

Major British Writers	80-202	3	(3,0)
A Modern Language		3	(3,0)
Economic Principles and Problems	5-202	3	(3,0)
**Business Statistics I	5-205	3	(3,0)
Accounting Principles and Practice II	5-212	3	(2,2)
†2nd Year Basic ROTC			
RPE		0	(0,1)

JUNIOR YEAR—

**Principles of Management	5-325	3	(3,0)
**Government Finance	5-311	3	(3,0)
Taxation	5-312	3	(3,0)
**Computer Principles	36-305	3	(3,0)
Business Finance II	5-322	3	(3,0)
†1st Year Advanced ROTC			

SENIOR YEAR—

Production Management	5-410	3	(3,0)
**Approved Non-Business Elective		3	(3,0)
Approved Non-Business Elective		3	(3,0)
Departmental Elective		3	(3,0)
Departmental Elective		3	(3,0)
†2nd Year Advanced ROTC			

HOURS REQUIRED FOR GRADUATION: 122 plus successful completion of 8 semesters of ROTC

DEPARTMENTAL ELECTIVES—

Cost Accounting	5-401	3	(2,2)
Advanced Accounting Problems	5-402	3	(2,2)
Investments	5-404	3	(3,0)
Transportation	5-406	3	(3,0)
Bank Management	5-408	3	(3,0)
Personnel Management	5-409	3	(3,0)
Auditing	5-416	3	(2,2)
Marketing Problems	5-418	3	(3,0)
Seminar in Business Administration	5-420	3	(3,0)
Business Policy	5-422	3	(3,0)

B.S. CHEMISTRY MAJOR
First Semester

FRESHMAN YEAR—

Composition and Literature	80-101	3	(3,0)[*]
General Chemistry	40-101	3	(3,0)
General Chemistry Laboratory	40-111	1	(0,2)
Analytic Geometry and Calculus	30-131	4	(4,0)
Elementary German	91-101	3	(3,0)
[†]1st Year Basic ROTC			
RPE		0	(0,2)

SOPHOMORE YEAR—

Major British Writers	80-201	3	(3,0)
Organic Chemistry	40-207	3	(3,0)
Organic Chemistry Laboratory	40-217	1	(0,3)
Intermediate Calculus	30-231	4	(4,0)
Scientific German	91-203	3	(3,0)
[†]2nd Year Basic ROTC			
RPE		0	(0,1)

JUNIOR YEAR—

Physics for Engineers and Physical Scientists	26-211	4	(3,2)
Quantitative Analysis	40-300	4	(2,4)
Physical Chemistry	40-305	3	(3,0)
Physical Chemistry Laboratory	40-315	1	(0,3)
A Survey of American History	70-101	3	(3,0)
[†]1st Year Advanced ROTC			

SENIOR YEAR—

Inorganic Chemistry	40-401	3	(3,0)
Special Topics in Organic Chemistry	40-403	3	(3,0)
Qualitative Organic Analysis	40-408	4	(1,6)
Physical Chemistry Topics	40-411	3	(3,0)
Senior Research	40-419	2	
Senior Seminar	40-429	1	
[†]2nd Year Advanced ROTC			

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[*] Represents semester hour credits, lectures, and laboratory hours in that sequence.

[†] ROTC hours (credit, lecture and/or lab) may vary each semester by military department; however, the total hours applied toward graduation requirements may not exceed 16 semester hours, exclusive of FIP, without the approval of the department head and the vice president for academic affairs.

B.S. CHEMISTRY MAJOR
Second Semester

FRESHMAN YEAR—

Composition and Literature	80-102	3	(3,0)
General Chemistry	40-102	3	(3,0)
General Chemistry Laboratory	40-112	1	(0,2)
Analytic Geometry and Calculus	30-132	4	(4,0)
Elementary German	91-102	3	(3,0)
†1st Year Basic ROTC			
RPE		0	(0,2)

SOPHOMORE YEAR—

Major British Writers	80-202	3	(3,0)
Physics for Engineers and Physical Scientists	26-110	4	(3,2)
Differential Equations	30-232	3	(3,0)
Organic Chemistry	40-208	3	(3,0)
Organic Chemistry Laboratory	40-218	1	(0,3)
Scientific German	91-204	3	(3,0)
†2nd Year Basic ROTC			
RPE		0	(0,1)

JUNIOR YEAR—

Physics for Engineers and Physical Scientists	26-212	4	(3,2)
Instrumental Methods	40-302	4	(2,4)
Physical Chemistry	40-306	3	(3,0)
Physical Chemistry Laboratory	40-316	1	(0,3)
A Survey of American History	70-102	3	(3,0)
Chemical Literature	40-308	1	(1,0)
†1st Year Advanced ROTC			

SENIOR YEAR—

Inorganic Chemistry	40-402	3	(3,0)
Inorganic Preparations	40-412	2	(1,2)
Elective		3	(3,0)
Elective		3	(3,0)
Elective		3	(3,0)
Senior Research Project	40-420	1	
Senior Seminar	40-430	0	
†2nd Year Advanced ROTC			

HOURS REQUIRED FOR GRADUATION: 121 plus successful completion of 8 semesters of ROTC

B.A. CHEMISTRY MAJOR
First Semester

FRESHMAN YEAR—

Composition and Literature	80-101	3	(3,0)
General Chemistry	40-101	3	(3,0)
General Chemistry Laboratory	40-111	1	(0,2)
††Pre-Calculus Mathematics, or	30-103	3	(3,0)
Introductory Calculus	30-201		
**Introduction to Zoology, or	47-104	4	(3,2)
A Survey of American History	70-101	3	(3,0)
†1st Year Basic ROTC			
RPE		0	(0,2)

SOPHOMORE YEAR—

Major British Writers	80-201	3	(3,0)
Organic Chemistry	40-207	3	(3,0)
Organic Chemistry Laboratory	40-217	1	(0,3)
Physics for Biology and Premedicine	26-205	4	(3,2)
***A Survey of American History, or	70-101	3	(3,0)
Elective			
†2nd Year Basic ROTC			
RPE		0	(0,1)

JUNIOR YEAR—

Quantitative Analysis	40-300	4	(3,2)
Physics for Biology and Premedicine	26-207	4	(3,2)
A Modern Language	-101	3	(3,0)
The English Language, or	80-416	3	(3,0)
Public Speaking	80-205		
Elective		3	(3,0)
†1st Year Advanced ROTC			

SENIOR YEAR—

A Modern Language	-201	3	(3,0)
Chemistry Elective		3	(3,0)
Approved Elective		3	(3,0)
Approved Elective		3	(3,0)
Elective		3	(3,0)
Senior Seminar	40-429	1	
†2nd Year Advanced ROTC			

*Represents semester hour credits, lectures, and laboratory hours in that sequence.

**Students planning a career in medicine should take 47-104 (Introduction to Zoology) and 47-10 (Introduction to Botany) for the elective in the freshman year.

††Students well founded in algebra and trigonometry are encouraged to substitute 30-201 and 30-202.

***70-101 and 70-102 (Survey of American History) are required for graduation.

†ROTC hours (credit, lecture and/or lab) may vary each semester by military department; however the total hours applied toward graduation requirements may not exceed 16 semester hours, exclusiv of FIP, without the approval of the department head and the vice president for academic affairs.

B.A. CHEMISTRY MAJOR
Second Semester

FRESHMAN YEAR—

Composition and Literature	80-102	3	(3,0)
General Chemistry	40-102	3	(3,0)
General Chemistry Laboratory	40-112	1	(0,2)
††Finite Mathematics, or	30-104	3	(3,0)
Introductory Calculus	30-202		
**Introduction to Botany, or	47-103	4	(3,2)
A Survey of American History	70-102	(3)	(3,0)
†1st Year Basic ROTC			
RPE		0	(0,2)

SOPHOMORE YEAR—

Major British Writers	80-202	3	(3,0)
Organic Chemistry	40-208	3	(3,0)
Organic Chemistry Laboratory	40-218	1	(0,3)
Physics for Biology and Premedicine	26-206	4	(3,2)
***A Survey of American History, or	70-102	3	(3,0)
Elective			
†2nd Year Basic ROTC			
RPE		0	(0,1)

JUNIOR YEAR—

Survey of Physical Chemistry	40-301	3	(3,0)
A Modern Language	-102	3	(3,0)
Chemistry Elective		3	(3,0)
Approved Elective		3	(3,0)
Elective		3	(3,0)
†1st Year Advanced ROTC			

SENIOR YEAR—

A Modern Language	-202	3	(3,0)
Chemistry Elective		3	(3,0)
Approved Elective		3	(3,0)
Approved Elective		3	(3,0)
Elective		3	(3,0)
Senior Seminar	40-430	0	
†2nd Year Advanced ROTC			

HOURS REQUIRED FOR GRADUATION: 118 plus successful completion of 8 semesters of ROTC

CIVIL ENGINEERING MAJOR
First Semester

FRESHMAN YEAR—

Composition and Literature	80-101	3	(3,0)
General Chemistry	40-101	3	(3,0)
General Chemistry Laboratory	40-111	1	(0,2)
Analytic Geometry and Calculus	30-131	4	(4,0)
A Survey of American History	70-101	3	(3,0)
Graphic Science	10-101	2	(0,4)
†1st Year Basic ROTC			
RPE		0	(0,2)

SOPHOMORE YEAR—

Major British Writers	80-201	3	(3,0)
Physics for Engineers and Physical Scientists	26-110	4	(3,0)
Intermediate Calculus	30-231	4	(4,0)
Surveying	10-205	4	(3,2)
Nontechnical Elective		3	(3,0)
†2nd Year Basic ROTC			
RPE		0	(0,1)

JUNIOR YEAR—

Physics for Engineers and Physical Scientists	26-212	4	(3,2)
Dynamics	10-301	3	(3,0)
Mechanics of Materials	10-303	4	(3,2)
Transportation Engineering	10-305	3	(3,0)
Materials Laboratory	10-307	1	(0,3)
Geology for Engineers	45-303	3	(2,2)
†1st Year Advanced ROTC			

SENIOR YEAR—

Concrete Laboratory	10-401	1	(0,2)
Reinforced Concrete Design	10-403	3	(3,0)
Structural Analysis II	10-405	3	(2,2)
Fluid Mechanics	10-407	4	(3,2)
Soil Mechanics and Foundations	10-409	3	(3,0)
Technical Elective		3	(3,0)
Senior Research Project	10-420	0	
†2nd Year Advanced ROTC			

*Represents semester hour credits, lectures, and laboratory hours in that sequence.

†ROTC hours (credit, lecture and/or lab) may vary each semester by military department; however, the total hours applied toward graduation requirements may not exceed 16 semester hours, exclusive of FIP, without the approval of the department head and the vice president for academic affairs.

CIVIL ENGINEERING MAJOR

Second Semester

FRESHMAN YEAR—

Composition and Literature	80-102	3	(3,0)
General Chemistry	40-102	3	(3,0)
General Chemistry Laboratory	40-112	1	(0,2)
Analytic Geometry and Calculus	30-132	4	(4,0)
A Survey of American History	70-102	3	(3,0)
Graphic Science	10-102	2	(0,4)
†1st Year Basic ROTC			
RPE		0	(0,2)

SOPHOMORE YEAR—

Major British Writers	80-202	3	(3,0)
Physics for Engineers and Physical Scientists	26-211	4	(3,2)
Differential Equations	30-232	3	(3,0)
Statics	10-202	3	(2,2)
Photogrammetry	10-204	1	(0,2)
Surveying	10-206	4	(3,2)
†2nd Year Basic ROTC			
RPE		0	(0,1)

JUNIOR YEAR—

Highway Engineering	10-306	3	(2,2)
Structural Analysis I	10-308	3	(3,0)
Computer Application for Civil Engineering	10-312	1	(1,0)
Engineering Adminstration	10-314	2	(2,0)
Elements of Electrical Engineering	20-308	3	(2,2)
Nontechnical Elective		3	(3,0)
Nontechnical Elective		3	(3,0)
†1st Year Advanced ROTC			

SENIOR YEAR—

Soil Mechanics Laboratory	10-402	1	(0,2)
Steel Design	10-406	3	(2,2)
Environmental Engineering	10-408	4	(3,2)
Soil Mechanics and Foundations	10-410	3	(3,0)
Prestressed Concrete Design	10-412	3	(3,0)
Senior Research Project	10-420	2	
†2nd Year Advanced ROTC			

HOURS REQUIRED FOR GRADUATION: 137 plus successful completion of 8 semesters of ROTC

EDUCATION MAJOR
First Semester

FRESHMAN YEAR—

Composition and Literature	80-101	3	(3,0)
††Pre-Calculus Mathematics	30-103	3	(3,0)
Introduction to Botany	47-103	4	(3,2)
A Survey of American History	70-101	3	(3,0)
†1st Year Basic ROTC			
RPE		0	(0,2)

SOPHOMORE YEAR—

Major British Writers	80-201	3	(3,0)
Physical Science		4	(3,2)
Social Studies (other than History)		3	(3,0)
General Psychology	51-201	3	(3,0)
‡Teaching Field Subject		3	(3,0)
†2nd Year Basic ROTC			
RPE		0	(0,1)

JUNIOR YEAR—

Philosophy of Education	50-301	3	(3,0)
Educational Psychology	50-302	3	(3,0)
Teaching Field Subject		3	(3,0)
Music Appreciation	54-205	3	(3,0)
Personal and Community Health	58-101	3	(3,0)
†1st Year Advanced ROTC			

SENIOR YEAR—

Teaching Reading in the Secondary School	50-408	3	(3,0)
Teaching Field Subject		3	(3,0)
Teaching Field Subject		3	(3,0)
Teaching Field Subject		3	(3,0)
Approved Elective		3	(3,0)
†2nd Year Advanced ROTC			

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*Represents semester hour credits, lectures, and laboratory hours in that sequence.

**Student must select his teaching-field major no later than the beginning of junior year.

†ROTC hours (credit, lecture and/or lab) may vary each semester by military department; however, the total hours applied toward graduation requirements may not exceed 16 semester hours, exclusive of FIP, without the approval of the department head and the vice president for academic affairs.

††Students well founded in algebra and trigonometry are encouraged to substitute 30-201 and 30-202.

‡If teaching field is a science, these will often be 4 hour courses with lab.

EDUCATION MAJOR
Second Semester

FRESHMAN YEAR—

Composition and Literature	80-102	3	(3,0)
††Finite Mathematics	30-104	3	(3,0)
Introduction to Zoology	47-104	4	(3,2)
A Survey of American History	70-102	3	(3,0)
†1st Year Basic ROTC			
RPE		0	(0,2)

SOPHOMORE YEAR—

Major British Writers	80-202	3	(3,0)
Physical Science		4	(3,2)
Social Studies (other than History)		3	(3,0)
Art Appreciation	54-206	3	(3,0)
Introduction to Education	50-201	3	(3,0)
†2nd Year Basic ROTC			
RPE		0	(0,1)

JUNIOR YEAR—

Adolescent Development	50-308	3	(3,0)
Teaching Field Subject		3	(3,0)
Teaching Field Subject		3	(3,0)
Teaching Field Subject		3	(3,0)
Approved Elective		3	
†1st Year Advanced ROTC Army: MS 402 and 302			
Air Force: AS 302 and 402			

SENIOR YEAR—

‡Methods and Materials of Secondary School Teaching	50-401	3	(3,0)
‡Directed Teaching	50-400	6	
‡Special Methods in Teaching	50-402	3	(3,0)
‡School in a Multi-cultural Society	50-422	3	(3,0)
ROTC (Navy)			

HOURS REQUIRED FOR GRADUATION: 118 plus successful completion of 8 semesters of ROTC

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‡These courses must be taken in the second semester of the final year.

ELECTRICAL ENGINEERING MAJOR
First Semester

FRESHMAN YEAR—			
Composition and Literature	80-101	3	(3,0)*
General Chemistry	40-101	3	(3,0)
General Chemistry Laboratory	40-111	1	(0,2)
Analytic Geometry and Calculus	30-131	4	(4,0)
The Engineering Profession	20-101	1	(1,0)
Graphic Communication	20-105	1	(0,2)
†1st Year Basic ROTC			
RPE		0	(0,2)
SOPHOMORE YEAR—			
Major British Writers	80-201	3	(3,0)
Intermediate Calculus	30-231	4	(4,0)
Physics for Engineers and Physical Scientists	26-211	4	(3,2)
A Survey of American History	70-101	3	(3,0)
Introduction to Electrical Engineering	20-201	3	(3,0)
†2nd Year Basic ROTC			
RPE		0	(0,1)
JUNIOR YEAR—			
Advanced Calculus	30-321	3	(3,0)
Electrical Laboratory	20-301	1	(0,2)
Linear Circuit Analysis	20-309	3	(3,0)
**Mechanics or	26-319	3	(3,0)
Optics	26-305		
Public Speaking	80-205	3	(3,0)
Humanities Elective		3	(3,0)
†1st Year Advanced ROTC			
SENIOR YEAR—			
Seminar	20-409	1	(1,0)
Electrical Laboratory	20-411	1	(0,2)
Electromagnetic Theory	20-417	3	(3,0)
Electronics I	20-401	3	(3,0)
Professional Elective		3	(3,0)
Professional Elective		3	(3,0)
†2nd Year Advanced ROTC			
PROFESSIONAL ELECTIVES IN ELECTRICAL ENGINEERING—			
Electrical Measurements	20-405	3	(2,2)
Communications Engineering	20-423	3	(3,0)
Systems I	20-425	3	(3,0)
Digital Systems Fundamentals	20-427	3	(3,0)

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*Represents semester hour credits, lectures, and laboratory hours in that sequence.

**Approval for substituting other engineering science courses may be granted.

†ROTC hours (credit, lecture and/or lab) may vary each semester by military department; however, the total hours applied toward graduation requirements may not exceed 16 semester hours, exclusive of FIP, without the approval of the department head and the vice president for academic affairs.

ELECTRICAL ENGINEERING MAJOR
Second Semester

FRESHMAN YEAR—			
*Composition and Literature	80-102	3	(3,0)
Principles of Chemistry	40-106	3	(3,0)
Engineering Analysis	20-106	1	(1,1)
Analytic Geometry and Calculus	30-132	4	(4,0)
Physics for Engineers and Physical Scientists	26-110	4	(3,2)
†1st Year Basic ROTC			
RPE		0	(0,2)
SOPHOMORE YEAR—			
Major British Writers	80-202	3	(3,0)
Linear Algebra and Differential Equations	30-234	4	(4,0)
Physics for Engineers and Physical Scientists	26-212	4	(3,2)
A Survey of American History	70-102	3	(3,0)
Introduction to Fortran	36-207	1	(1,1)
Introduction to Electrical Engineering	20-202	3	(3,0)
†2nd Year Basic ROTC			
RPE		0	(0,1)
JUNIOR YEAR—			
Advanced Calculus	30-322	3	(3,0)
Electrical Laboratory	20-302	1	(0,2)
Energy Conversion	20-310	5	(5,0)
Electrical Properties of Materials	20-314	3	(3,0)
**Nuclear Engineering or	20-304	3	(3,0)
Heat and Thermodynamics	26-310		
Engineering Administration	10-314	2	(2,0)
†1st Year Advanced ROTC			
SENIOR YEAR—			
Electrical Design Workshop	20-412	1	(0,2)
Electromagnetic Theory	20-418	3	(3,0)
Humanities Elective		3	(3,0)
Professional Elective		3	(3,0)
Professional Elective		3	(3,0)
Professional Elective		3	(3,0)
†2nd Year Advanced ROTC			

HOURS REQUIRED FOR GRADUATION: 126 plus successful completion of 8 semesters of ROTC

PROFESSIONAL ELECTIVES IN ELECTRICAL ENGINEERING—			
Electronics II	20-402	3	(3,0)
Electric Power Systems	20-408	3	(3,0)
Systems Simulation	20-419	3	(3,0)
Systems II	20-426	3	(3,0)
Digital Systems Design	20-428	3	(3,0)
Senior Research Project	20-420	3	

ENGLISH MAJOR
First Semester

FRESHMAN YEAR—

Composition and Literature	80-101	3	(3,0)*
††Pre-Calculus Mathematics	30-103	3	(3,0)
A Survey of American History	70-101	3	(3,0)
A Modern Language		3	(3,0)
Biology, Chemistry, or Physics		4	(3,2)
†1st Year Basic ROTC			
RPE		0	(0,2)

SOPHOMORE YEAR—

Survey of English Literature	80-213	3	(3,0)
History of Western Civilization	70-203	3	(3,0)
General Semantics, or	80-210	3	(3,0)
Mythology, or	80-211		
The Bible as Literature	80-212		
Elective		3	(3,0)
A Modern Language		3	(3,0)
†2nd Year Basic ROTC			
RPE		0	(0,1)

JUNIOR YEAR—

**Shakespeare, or	80-317	3	(3,0)
Shakespeare	80-318		
**An Elective from Group B		3	(3,0)
English Elective		3	(3,0)
Elective		3	(3,0)
Elective		3	(3,0)
†1st Year Advanced ROTC			

SENIOR YEAR—

**American Literature, or	80-327	3	(3,0)
American Literature to 1900	80-328		
**An Elective from Group A		3	(3,0)
English Elective		3	(3,0)
Elective		3	(3,0)
Elective		3	(3,0)
†2nd Year Advanced ROTC			

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*Represents semester hour credits, lectures, and laboratory hours in that sequence.

**May be taken first or second semester.

††Students well founded in algebra and trigonometry are encouraged to substitute 30-201 and 30-202.

†ROTC hours (credit, lecture and/or lab) may vary each semester by military department, however, the total hours applied toward graduation requirements may not exceed 16 semester hours, exclusive of FIP, without the approval of the department head and the vice president for academic affairs.

ENGLISH MAJOR
Second Semester

FRESHMAN YEAR—

Composition and Literature	80-102	3	(3,0)
††Finite Mathematics	30-104	3	(3,0)
A Survey of American History	70-102	3	(3,0)
A Modern Language		3	(3,0)
Biology, Chemistry, or Physics		4	(3,2)
†1st Year Basic ROTC			
RPE		0	(0,2)

SOPHOMORE YEAR—

Survey of English Literature	80-214	3	(3,0)
History of Western Civilization	70-204	3	(3,0)
General Semantics, or	80-210	3	(3,0)
Mythology, or	80-211		
The Bible as Literature	80-212		
Elective		3	(3,0)
A Modern Language		3	(3,0)
†2nd Year Basic ROTC			
RPE		0	(0,1)

JUNIOR YEAR—

**Chaucer, or	80-301	3	(3,0)
Milton	80-319		
**An Elective from Group C		3	(3,0)
English Elective		3	(3,0)
Elective		3	(3,0)
Elective		3	(3,0)
†1st Year Advanced ROTC			

SENIOR YEAR—

**An Elective from Group C		3	(3,0)
English Elective		3	(3,0)
English Elective		3	(3,0)
Elective		3	(3,0)
Elective		3	(3,0)
†2nd Year Advanced ROTC			

HOURS REQUIRED FOR GRADUATION: 122 plus successful completion of 8 semesters of ROTC

HISTORY MAJOR
First Semester

FRESHMAN YEAR—

Composition and Literature	80-101	3	(3,0)
††Pre-Calculus Mathematics	30-103	3	(3,0)
American National Government	60-201	3	(3,0)
A Survey of American History	70-101	3	(3,0)
A Modern Language		3	(3,0)
†1st Year Basic ROTC			
RPE		0	(0,2)

SOPHOMORE YEAR—

Major British Writers	80-201	3	(3,0)
History of Western Civilization	70-203	3	(3,0)
Economic Origins and Principles	5-201	3	(3,0)
Biology, Chemistry, or Physics		4	(3,2)
A Modern Language		3	(3,0)
†2nd Year Basic ROTC			
RPE		0	(0,1)

JUNIOR YEAR—

History of England	70-301	3	(3,0)
***History Course, Group A		3	(3,0)
**Elementary Geography	71-309	3	(3,0)
Elective		3	(3,0)
Elective		3	(3,0)
†1st Year Advanced ROTC			

SENIOR YEAR—

History Course, Group C		3	(3,0)
***History Course, Group B		3	(3,0)
Constitutional Law, or	60-401	3	(3,0)
International Politics, or	60-405		
Political Theory	60-407		
Elective		3	(3,0)
Elective		3	(3,0)
†2nd Year Advanced ROTC			

*Represents semester hour credits, lectures, and laboratory hours in that sequence.

**May be taken first or second semester.

***May be taken in junior or senior year.

Group A: 70-303, 70-304, 70-309, 70-313, 70-314, 70-319, 70-320, 70-405, and 70-406.
Group B: 70-305, 70-306, 70-307, 70-308, 70-310, 70-318, and 70-321.
Group C: 70-401, 70-402, 70-403, 70-404, 70-407, 70-408, 70-409, and 70-410.

††Students well founded in algebra and trigonometry are encouraged to substitute 30-201 and 30-202.

†ROTC hours (credit, lecture and/or lab) may vary each semester by military department; however, the total hours applied toward graduation requirements may not exceed 16 semester hours, exclusive of FIP, without the approval of the department head and the vice president for academic affairs.

HISTORY MAJOR
Second Semester

FRESHMAN YEAR—

Composition and Literature	80-102	3	(3,0)
††Finite Mathematics	30-104	3	(3,0)
State and Local Government	60-202	3	(3,0)
A Survey of American History	70-102	3	(3,0)
A Modern Language		3	(3,0)
†1st Year Basic ROTC			
RPE		0	(0,2)

SOPHOMORE YEAR—

Major British Writers	80-202	3	(3,0)
History of Western Civilization	70-204	3	(3,0)
Economic Principles and Problems	5-202	3	(3,0)
Biology, Chemistry, or Physics		4	(3,2)
A Modern Language		3	(3,0)
†2nd Year Basic ROTC			
RPE		0	(0,1)

JUNIOR YEAR—

History of England	70-302	3	(3,0)
***History Course, Group A		3	(3,0)
**Junior or Senior History Course		3	(3,0)
Elective		3	(3,0)
Elective		3	(3,0)
†1st Year Advanced ROTC			

SENIOR YEAR—

History Course, Group C		3	(3,0)
***History Course, Group B		3	(3,0)
Constitutional Law, or	60-402	3	(3,0)
International Politics, or	60-406		
Political Theory	60-408		
Elective		3	(3,0)
Senior Research Project, or	70-420	3	(3,0)
Approved Elective			
†2nd Year Advanced ROTC			

HOURS REQUIRED FOR GRADUATION: 122 plus successful completion of 8 semesters of ROTC

B.S. MATHEMATICS MAJOR
First Semester

FRESHMAN YEAR—

Composition and Literature	80-101	3	(3,0)*
General Chemistry	40-101	3	(3,0)
General Chemistry Laboratory	40-111	1	(0,2)
Analytic Geometry and Calculus	30-131	4	(4,0)
A Survey of American History	70-101	3	(3,0)
†1st Year Basic ROTC			
RPE		0	(0,2)

SOPHOMORE YEAR—

Major British Writers	80-201	3	(3,0)
Physics for Engineers and Physical Scientists	26-211	4	(3,2)
Intermediate Calculus	30-231	4	(4,0)
A Survey of American History	70-102	3	(3,0)
German, French, or Russian	91-101, 92-101, or 99-101	3	(3,0)
†2nd Year Basic ROTC			
RPE		0	(0,1)

JUNIOR YEAR—

Modern Algebra	30-303	3	(3,0)
Advanced Calculus	30-321	3	(3,0)
Applied Numerical Methods	36-301	3	(3,0)
German, French, or Russian	91-201, 92-201, or 99-201	3	(3,0)
Elective		3	(3,0)
†1st Year Advanced ROTC			

SENIOR YEAR—

Real Analysis	30-401	3	(3,0)
Probability and Statistics	30-405	3	(3,0)
Elective		3	(3,0)
Elective		3	(3,0)
Elective		3	(3,0)
†2nd Year Advanced ROTC			

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*Represents semester hour credits, lectures, and laboratory hours in that sequence.

***The choice of these courses will be made with the approval of the head of the Department of Mathematics and supervising professor.

B.S. MATHEMATICS MAJOR
Second Semester

FRESHMAN YEAR—

Composition and Literature	80-102	3	(3,0)
General Chemistry	40-102	3	(3,0)
General Chemistry Laboratory	40-112	1	(0,2)
Analytic Geometry and Calculus	30-132	4	(4,0)
Physics for Engineers and Physical Scientists	26-110	4	(3,2)
†1st Year Basic ROTC			
RPE		0	(0,2)

SOPHOMORE YEAR—

Major British Writers	80-202	3	(3,0)
Differential Equations	30-232	3	(3,0)
Linear Algebra	30-240	3	(3,0)
French, German, or Russian	91-102, 92-102, or 99-102	3	(3,0)
Introduction to Computing	36-205	3	(3,0)
†2nd Year Basic ROTC			
RPE		0	(0,1)

JUNIOR YEAR—

Modern Geometry	30-305	3	(3,0)
Numerical Analysis	30-318	3	(3,0)
Advanced Calculus	30-322	3	(3,0)
German, French, or Russian	91-202, 92-202, or 99-202	3	(3,0)
Elective		3	(3,0)
†1st Year Advanced ROTC			

SENIOR YEAR—

Theory of Numbers	30-411	3	(3,0)
Topology	30-414	3	(3,0)
***Complex Analysis or Senior Research Project	30-422 or 30-420	3	
Elective		3	(3,0)
Elective		3	(3,0)
†2nd Year Advanced ROTC			

HOURS REQUIRED FOR GRADUATION: 121 plus successful completion of 8 semesters of ROTC

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†ROTC hours (credit, lecture and/or lab) may vary each semester by military department; however, the total hours applied toward graduation requirements may not exceed 16 semester hours, exclusive of FIP, without the approval of the department head and the vice president for academic affairs.

B.A. MATHEMATICS MAJOR
First Semester

FRESHMAN YEAR—

Composition and Literature	80-101	3	(3,0)*
**Biology, Chemistry, or Physics		4	(3,2)
††Pre-Calculus Mathematics	30-103	3	(3,0)
A Modern Language		3	(3,0)
†1st Year Basic ROTC			
RPE		0	(0,2)

SOPHOMORE YEAR—

Major British Writers	80-201	3	(3,0)
Analytic Geometry and Calculus	30-131	4	(4,0)
Introductory Statistics	30-211	3	(3,0)
A Modern Language		3	(3,0)
Introduction to Computing	36-205	3	(3,0)
†2nd Year Basic ROTC			
RPE		0	(0,1)

JUNIOR YEAR—

Differential Equations	30-232	3	(3,0)
General Elective		3	(3,0)
***Approved Elective		3	(3,0)
***Approved Elective		3	(3,0)
General Elective		3	(3,0)
†1st Year Advanced ROTC			

SENIOR YEAR—

Mathematics Elective		3	(3,0)
***Approved Elective		3	(3,0)
***Approved Elective		3	(3,0)
General Elective		3	(3,0)
General Elective		3	(3,0)
†2nd Year Advanced ROTC			

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*Represents semester hour credits, lectures, and laboratory hours in that sequence.

**Must be followed the second semester by four semester hours of the same science. Physics 26-11 and 26-111 may be taken concurrently with 30-131 and 30-132 with permission of the heads of the De partment of Mathematics and Physics.

***The choice of these courses will be made with the approval of the head of the Department of Mathe matics.

††Students well founded in algebra and trigonometry may substitute 30-131 and 30-132.

B.A. MATHEMATICS MAJOR
Second Semester

FRESHMAN YEAR—			
Composition and Literature	80-102	3	(3,0)
Biology, Chemistry, or Physics		4	(3,2)
††Finite Mathematics	30-104	3	(3,0)
A Survey of American History	70-101	3	(3,0)
A Modern Language		3	(3,0)
†1st Year Basic ROTC			
RPE		0	(0,2)
SOPHOMORE YEAR—			
Major British Writers	80-202	3	(3,0)
Analytic Geometry and Calculus	30-132	4	(4,0)
A Modern Language		3	(3,0)
***Approved Elective		3	(3,0)
A Survey of American History	70-102	3	(3,0)
†2nd Year Basic ROTC			
RPE		0	(0,1)
JUNIOR YEAR—			
Linear Algebra	30-240	3	(3,0)
Mathematics Elective		3	(3,0)
***Approved Elective		3	(3,0)
***Approved Elective		3	(3,0)
General Elective		3	(3,0)
†1st Year Advanced ROTC			
SENIOR YEAR—			
Mathematics Elective		3	(3,0)
***Approved Elective		3	(3,0)
***Approved Elective		3	(3,0)
General Elective		3	(3,0)
General Elective		3	(3,0)
†2nd Year Advanced ROTC			

HOURS REQUIRED FOR GRADUATION: 121 plus successful completion of 8 semesters of ROTC

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†ROTC hours (credit, lecture and/or lab) may vary each semester by military department; however, the total hours applied toward graduation requirements may not exceed 16 semester hours, exclusive of FIP, without the approval of the department head and the vice president for academic affairs.

MODERN LANGUAGE MAJOR
First Semester

FRESHMAN YEAR—

Composition and Literature	80-101	3	(3,0)
††Pre-Calculus Mathematics	30-103	3	(3,0)
A Survey of American History	70-101	3	(3,0)
Elementary Primary Modern Language	**-101	3	(3,0)
Elementary Secondary Modern Language	**-101	3	(3,0)
†1st Year Basic ROTC			
RPE		0	(0,2)

SOPHOMORE YEAR—

Major British Writers	80-201	3	(3,0)
Biology, Chemistry, or Physics		4	(3,2)
History of Western Civilization	70-203	3	(3,0)
Intermediate Primary Modern Language	**-201	3	(3,0)
Intermediate Secondary Modern Language	**-201	3	(3,0)
†2nd Year Basic ROTC			
RPE		0	(0,1)

JUNIOR YEAR—

Advanced PML or SML	3	(3,0)
Advanced PML or SML	3	(3,0)
Elective	3	(3,0)
Elective	3	(3,0)
Elective	3	(3,0)
†1st Year Advanced ROTC		

SENIOR YEAR—

Advanced PML or SML	3	(3,0)
***Advanced SML or PML	3	(3,0)
***Elective	3	(3,0)
Elective	3	(3,0)
Elective	3	(3,0)
†2nd Year Advanced ROTC		

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*Represents semester hour credits, lectures, and laboratory hours in that sequence.

**Spanish-90; German-91; French-92.

***A student must complete a minimum of four advanced courses in two MLs. These must includ 301-302 or 305-306 in either language. The four courses may be a combination of two in one languag and two in the other, or three in one and one in the other. Electives may include a third or fourth language.

††Students well founded in algebra and trigonometry are encouraged to substitute 30-201 and 30-202

MODERN LANGUAGE MAJOR
Second Semester

FRESHMAN YEAR—

Composition and Literature	80-102	3	(3,0)
††Finite Mathematics	30-104	3	(3,0)
A Survey of American History	70-102	3	(3,0)
Elementary Primary Modern Language	**-102	3	(3,0)
Elementary Secondary Modern Language	**-102	3	(3,0)
†1st Year Basic ROTC			
RPE		0	(0,2)

SOPHOMORE YEAR—

Major British Writers	80-202	3	(3,0)
Biology, Chemistry, or Physics		4	(3,2)
History of Western Civilization	70-204	3	(3,0)
Intermediate Primary Modern Language	**-202	3	(3,0)
Intermediate Secondary Modern Language	**-202	3	(3,0)
†2nd Year Basic ROTC			
RPE		0	(0,1)

JUNIOR YEAR—

Advanced PML or SML	3	(3,0)
Advanced PML or SML	3	(3,0)
Elective	3	(3,0)
Elective	3	(3,0)
Elective	3	(3,0)
†1st Year Advanced ROTC		

SENIOR YEAR—

Advanced PML or SML	3	(3,0)
***Advanced SML or PML	3	(3,0)
***Elective	3	(3,0)
Elective	3	(3,0)
Elective	3	(3,0)
†2nd Year Advanced ROTC		

HOURS REQUIRED FOR GRADUATION: 122 plus successful completion of 8 semesters of ROTC

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†ROTC hours (credit, lecture and/or lab) may vary each semester by military department; however, the total hours applied toward graduation requirements may not exceed 16 semester hours, exclusive of FIP, without the approval of the department head and the vice president for academic affairs.

PHYSICAL EDUCATION MAJOR

First Semester

FRESHMAN YEAR—

Composition and Literature	80-101	3	(3,0)[*]
[††]Pre-Calculus Mathematics	30-103	3	(3,0)
A Survey of American History	70-101	3	(3,0)
Introduction to Physical Education	59-101	3	(3,0)
Personal and Community Health	58-101	3	(3,0)
[†]1st Year Basic ROTC			
RPE	57-101	0	(1,1)

SOPHOMORE YEAR—

Major British Writers	80-201	3	(3,0)
Physical Science (Chemistry or Physics)		4	(3,2)
Measurement and Evaluation in Physical Education	59-205	3	(3,0)
Music Appreciation	54-205	3	(3,0)
Applied Methods Elective	59-	2	(1,2)
[†]2nd Year Basic ROTC			
RPE		0	(0,1)

JUNIOR YEAR—

Human Anatomy	47-303	3	(3,0)
Human Anatomy Laboratory	47-305	1	(0,2)
Child Development	50-307	3	(3,0)
Elective in Education	50-	3	(3,0)
Elective		3	(3,0)
Applied Methods Elective	59-	2	(1,2)
[†]1st Year Advanced ROTC			

SENIOR YEAR—

Special Physical Education	59-403	3	(2,2)
Physiology of Exercise	59-419	3	(2,2)
Elective		3	(3,0)
Elective		3	(3,0)
Elective in Education	50-	3	(3,0)
[†]2nd Year Advanced ROTC			

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[*] Represents semester hour credits, lectures, and laboratory hours in that sequence.

[†] ROTC hours (credit, lecture and/or lab) may vary each semester by military department; however, the total hours applied toward graduation requirements may not exceed 16 semester hours, exclusive of FIP, without the approval of the department head and the vice president for academic affairs.

[††] Students well founded in algebra and trigonometry are encouraged to substitute 30-201 and 30-202.

PHYSICAL EDUCATION MAJOR
Second Semester

FRESHMAN YEAR—

Composition and Literature	80-102	3	(3,0)
††Finite Mathematics	30-104	3	(3,0)
A Survey of American History	70-102	3	(3,0)
Introduction to Zoology	47-104	4	(3,2)
Learning Theory and Methodology in Physical Education	59-102	3	(2,2)
†1st Year Basic ROTC			
RPE		0	(0,2)

SOPHOMORE YEAR—

Major British Writers	80-202	3	(3,0)
Physical Science (Chemistry or Physics)		4	(3,2)
Applied Methods Elective	59-	2	(1,2)
Art Appreciation	54-206	3	(3,0)
Elective		3	(3,0)
†2nd Year Basic ROTC			
RPE		0	(0,2)

JUNIOR YEAR—

Human Physiology	47-304	3	(3,0)
Human Physiology Laboratory	47-306	1	(0,2)
Kinesiology	59-314	3	(2,2)
Adolescent Development	50-308	3	(3,0)
Elective		3	(3,0)
Applied Methods Elective	59-	2	(1,2)
†1st Year Advanced ROTC			

SENIOR YEAR—

Care and Prevention of Athletic Injuries	59-402	3	(2,2)
Administration of Physical Education	59-404	3	(3,0)
Elective in Health Education or Physical Education		3	(3,0)
Directed Teaching	59-400	6	(1,10)
†2nd Year Advanced ROTC			

HOURS REQUIRED FOR GRADUATION: 121 plus successful compileton of 8 semesters of ROTC

PHYSICS MAJOR
First Semester

FRESHMAN YEAR—

Composition and Literature	80-101	3	(3,0)
General Chemistry	40-101	3	(3,0)
General Chemistry Laboratory	40-111	1	(0,2)
Analytic Geometry and Calculus	30-131	4	(4,0)
A Survey of American History	70-101	3	(3,0)
Modern Physics Lectures	26-101	1	(1,0)
†1st Year Basic ROTC			
RPE		0	(0,2)

SOPHOMORE YEAR—

Major British Writers	80-201	3	(3,0)
Physics for Engineers and Physical Scientists	26-211	4	(3,2)
Intermediate Calculus	30-231	4	(4,0)
German, French, Russian, or Spanish		3	(3,0)
A Survey of American History	70-102	3	(3,0)
†2nd Year Basic ROTC			
RPE		0	(0,1)

JUNIOR YEAR—

Optics	26-305	3	(3,0)
Optics Laboratory	26-307	1	(0,2)
Thermodynamics	26-310	3	(3,0)
Electromagnetism	26-311	3	(3,0)
Advanced Calculus	30-321	3	(3,0)
German, French, Russian, or Spanish		3	(3,0)
†1st Year Advanced ROTC			

SENIOR YEAR—

Quantum Mechanics	26-405	3	(3,0)
Modern Physics	26-401	3	(3,0)
Advanced Laboratory Physics	26-403	1	(0,2)
Research Planning	26-419	1	
Elective		3	(3,0)
Elective		3	(3,0)
†2nd Year Advanced ROTC			

*Represents semester hour credits, lectures, and laboratory hours in that sequence.

†ROTC hours (credit, lecture and/or lab) may vary each semester by military department; however, the total hours applied toward graduation requirements may not exceed 16 semester hours, exclusive of FIP, without the approval of the department head and the vice president for academic affairs.

PHYSICS MAJOR
Second Semester

FRESHMAN YEAR—

Composition and Literature	80-102	3	(3,0)
General Chemistry	40-102	3	(3,0)
General Chemistry Laboratory	40-112	1	(0,2)
Analytic Geometry and Calculus	30-132	4	(4,0)
Physics for Engineers and Physical Scientists	26-110	4	(3,2)
†1st Year Basic ROTC			
RPE		0	(0,2)

SOPHOMORE YEAR—

Major British Writers	80-202	3	(3,0)
Physics for Engineers and Physical Scientists	26-212	4	(3,2)
Differential Equations	30-232	3	(3,0)
German, French, Russian, or Spanish		3	(3,0)
Introduction to Fortran	36-207	1	(1,1)
Elective		3	(3,0)
†2nd Year Basic ROTC			
RPE		0	(0,1)

JUNIOR YEAR—

Electronics	26-318	4	(3,2)
Mechanics	26-319	3	(3,0)
Electromagnetism	26-312	3	(3,0)
Advanced Calculus	30-322	3	(3,0)
German, French, Russian, or Spanish		3	(3,0)
†1st Year Advanced ROTC			

SENIOR YEAR—

Quantum Mechanics	26-406	3	(3,0)
Modern Physics	26-402	3	(3,0)
Senior Research Project	26-420	3	
Elective		3	(3,0)
Elective		3	(3,0)
†2nd Year Advanced ROTC			

HOURS REQUIRED FOR GRADUATION: 125 plus successful completion of 8 semesters of ROTC

POLITICAL SCIENCE MAJOR
First Semester

FRESHMAN YEAR—

Composition and Literature	80-101	3	(3,0)*
††Pre-Calculus Mathematics	30-103	3	(3,0)
**Biology, Chemistry, or Physics		4	(3,2)
A Survey of American History	70-101	3	(3,0)
A Modern Language		3	(3,0)
†1st Year Basic ROTC			
RPE		0	(0,2)

SOPHOMORE YEAR—

Major British Writers	80-201	3	(3,0)
Economic Origins and Principles	5-201	3	(3,0)
History of Western Civilization	70-203	3	(3,0)
***American National Government	60-201	3	(3,0)
A Modern Language		3	(3,0)
†2nd Year Basic ROTC			
RPE		0	(0,1)

JUNIOR YEAR—

International Law	60-301	3	(3,0)
American Foreign Relations	60-303	3	(3,0)
Public Administration	60-305	3	(3,0)
Elective		3	(3,0)
Elective		3	(3,0)
†1st Year Advanced ROTC			

SENIOR YEAR—

Constitutional Law	60-401	3	(3,0)
International Politics	60-405	3	(3,0)
Political Theory, or	60-407	3	(3,0)
Scope and Methods in Political Science	60-411		
Elective		3	(3,0)
Elective		3	(3,0)
†2nd Year Advanced ROTC			

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*Represents semester hour credits, lectures, and laboratory hours in that sequence.

**Physics open only to those who score in upper 75% of Mathematics Achievement Test.

***Available to freshmen except political science majors.

†ROTC hours (credit, lecture and/or lab) may vary each semester by military department; however, the total hours applied toward graduation requirements may not exceed 16 semester hours, exclusive of FIP, without the approval of the department head and the vice president for academic affairs.

††Students well founded in algebra and trigonometry are encouraged to substitute 30-201 and 30-202.

POLITICAL SCIENCE MAJOR
Second Semester

FRESHMAN YEAR—

Composition and Literature	80-102	3	(3,0)
††Finite Mathematics	30-104	3	(3,0)
Biology, Chemistry, or Physics		4	(3,2)
A Survey of American History	70-102	3	(3,0)
A Modern Language		3	(3,0)
†1st Year Basic ROTC			
RPE		0	(0,2)

SOPHOMORE YEAR—

Major British Writers	80-202	3	(3,0)
Economic Principles and Problems	5-202	3	(3,0)
State and Local Government	60-202	3	(3,0)
History of Western Civilization	70-204	3	(3,0)
A Modern Language		3	(3,0)
†2nd Year Basic ROTC			
RPE		0	(0,1)

JUNIOR YEAR—

International Organization, or	60-302	3	(3,0)
Problems in International Law	60-308		
American Parties and Politics	60-304	3	(3,0)
Comparative Politics	60-307	3	(3,0)
Elective		3	(3,0)
Elective		3	(3,0)
†1st Year Advanced ROTC			

SENIOR YEAR—

Constitutional Law	60-402	3	(3,0)
International Politics, or	60-406	3	(3,0)
****Urban Politics	60-413		
Political Theory, or	60-408	3	(3,0)
Contemporary Political Analysis	60-412		
Elective		3	(3,0)
Political Science Elective or Senior Research Project		3	(3,0)
†2nd Year Advanced ROTC			

HOURS REQUIRED FOR GRADUATION: 122 plus successful completion of 8 semesters of ROTC

****Urban Politics open to seniors in all departments and second semester political science juniors.

PSYCHOLOGY MAJOR
First Semester

FRESHMAN YEAR—

Composition and Literature	80-101	3	(3,0)*
††Pre-Calculus Mathematics	30-103	3	(3,0)
A Survey of American History	70-101	3	(3,0)
German or French	91-101 or 92-101	3	(3,0)
†1st Year Basic ROTC			
RPE		0	(0,2)

SOPHOMORE YEAR—

Major British Writers	80-201	3	(3,0)
Biology, Chemistry, or Physics		4	(3,2)
History of Western Civilization	70-203	3	(3,0)
German or French	91-201 or 92-201	3	(3,0)
Research Design in Psychology	51-203	3	(3,0)
†2nd Year Basic ROTC			
RPE		0	(0,1)

JUNIOR YEAR—

Experimental Psychology I	51-301	3	(3,0)
Theories of Personality	51-306	3	(3,0)
Introduction to Philosophy	81-201	3	(3,0)
Approved Fine Arts Elective		3	(3,0)
Approved Elective		3	(3,0)
†1st Year Advanced ROTC			

SENIOR YEAR—

Social Psychology	51-305	3	(3,0)
Psychology of Learning and Motivation	51-403	3	(3,0)
Psychological Testing	51-407	3	(3,0)
Approved Elective		3	(3,0)
Approved Elective		3	(3,0)
†2nd Year Advanced ROTC			

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*Represents semester hour credits, lectures, and laboratory hours in that sequence.

†ROTC hours (credit, lecture and/or lab) may vary each semester by military department; however, the total hours applied toward graduation requirements may not exceed 16 semester hours, exclusive of FIP, without the approval of the department head and the vice president for academic affairs.

††Students well founded in algebra and trigonometry are encouraged to substitute 30-201 and 30-202.

PSYCHOLOGY MAJOR
Second Semester

FRESHMAN YEAR—

Composition and Literature	80-102	3	(3,0)
††Finite Mathematics	30-104	3	(3,0)
A Survey of American History	70-102	3	(3,0)
German or French	91-102 or 92-102	3	(3,0)
General Psychology	51-201	3	(3,0)
†1st Year Basic ROTC			
RPE		0	(0,2)

SOPHOMORE YEAR—

Major British Writers	80-202	3	(3,0)
Biology, Chemistry, or Physics		4	(3,2)
History of Western Civilization	70-204	3	(3,0)
German or French	91-202 or 92-202	3	(3,0)
Human Growth and Development	51-310	3	(3,0)
†2nd Year Basic ROTC			
RPE		0	(0,1)

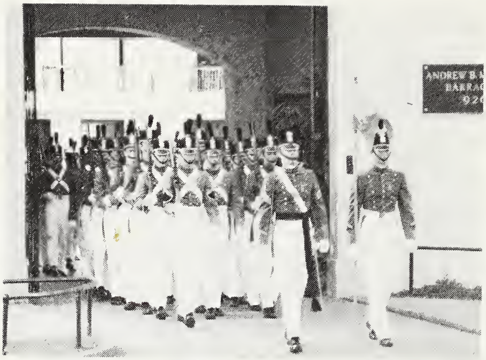
JUNIOR YEAR—

Experimental Psychology II	51-302	3	(3,0)
Abnormal Psychology	51-304	3	(3,0)
Animal Behavior or	47-307	3	(2,2)
Approved Science Elective			
Approved Elective		3	(3,0)
Approved Elective		3	(3,0)
†1st Year Advanced ROTC			

SENIOR YEAR—

Applied Psychology	51-404	3	(3,0)
History and Systems of Psychology	51-405	3	(3,0)
Approved Elective		3	(3,0)
Approved Elective		3	(3,0)
Approved Elective		3	(3,0)
†2nd Year Advanced ROTC			

HOURS REQUIRED FOR GRADUATION: 119 plus successful completion of 8 semesters of ROTC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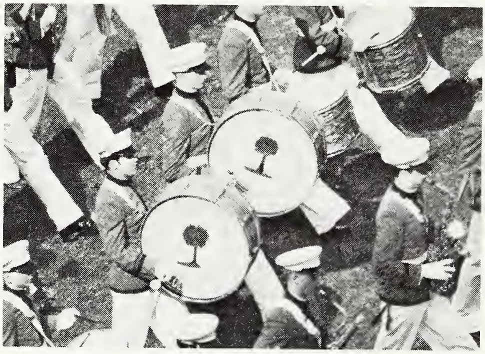
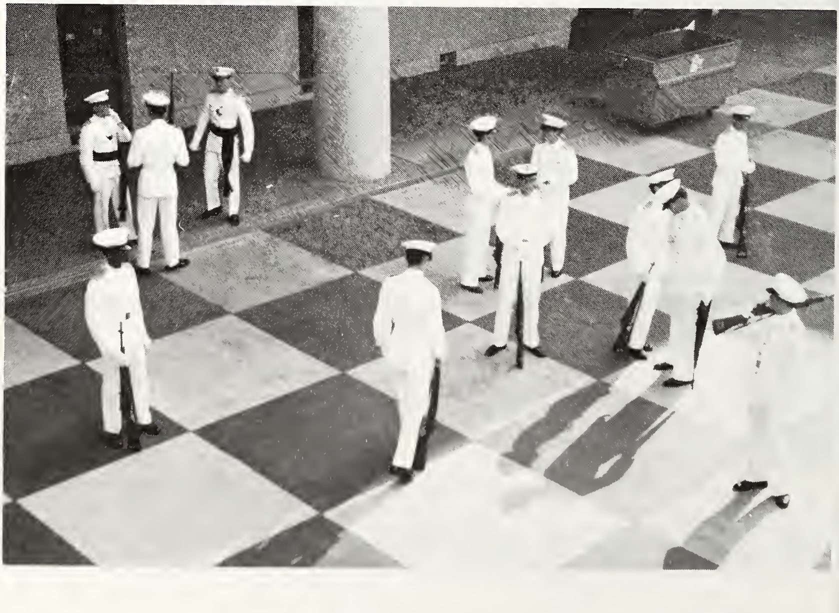




Department of Aerospace Studies

Professor: Welch
Assistant Professors: Benton, Breen, Gering, Gurrieri, Lauchner, McDermott, Massey, Thomes, Tinius, Varn

Citadel Air Force ROTC courses feature a wide variety of instruction and training opportunities. During the freshman and sophomore years the curriculum provides students with an understanding of air power's past, present, and future role in world affairs, as well as its relation to national defense. The course covers the doctrine, mission, and organization of the defense establishment of the United States and examines the development of air power over the past 75 years.

During the junior and senior years, the Air Force ROTC program draws upon many academic disciplines. It includes communicative skills and a comprehensive analysis of defense policy and the national defense structure, as well as the meaning of professionalism and professional responsibility, the military justice system, the functions and practice of leadership management principles, and problem solving.

Course of Instruction

7-101. *The U.S. Air Force Today I* One Credit Hour
(First Semester—Fourth Class Year)

This course and its follow-on provide the student with an introductory survey of the United States Air Force. In the first semester, the course begins with a discussion of the development of the Air Force, functions and organizations, Air Force doctrine, and national strategy. It continues with a discussion of the Strategic Air Command and the Aerospace Defense Command. Two class hours per week are required.

7-102. *The U.S. Air Force Today II* One Credit Hour
(Second Semester—Fourth Class Year)

In the second semester, this course covers the diverse roles of genera purpose and aerospace support forces, devoting special attention to th Tactical Air Command. It discusses cooperation with Army and Nav strategic and general purpose forces and examines Air Force suppor commands and separate operating agencies. Two class hours per wee are required.

7-201. *The History of Air Power I* One Credit Hou
(First Semester—Third Class Year)

This course explores two broad areas. First, the course examines th development of air power beginning with the first flights of the Wrigh brothers and ending with World War II. Second, it directs attention t the life of an Air Force officer, discussing such topics as professionalism leadership, education, and advancement. A visit to nearby Charlesto Air Force Base supports this area and includes a flight in a C-141 je transport. Two class hours per week are required.

7-202. *The History of Air Power II* One Credit Hou
(Second Semester—Third Class Year)

As a follow-on to 7-201, this course continues to examine the develop ment of air power. It stresses a variety of events and elements in the his tory of air power, especially where these provide significant examples o the impact of air power on strategic thought, and places emphasis o the last 25 years, ending with an examination of the peaceful employ ment of United States air power. Two class hours per week are required

7-401. *Concepts of Management* Three Credit Hour
(First Semester—Second Class Year)

This integrated management course emphasizes the individual as a manager. Emphasis is given to the manager's environment and job motivation, and individual and group behavior. Also included is a mini-course on individual communicative skills. The student develops his speaking and writing skills through oral and written presentations of military and current events topics. Three class hours per week are required.

7-402. *Management Concepts and Practice* Three Credit Hours
(Second Semester—Second Class Year)

This course deals with organizational and personal values related to the individual manager's leadership styles. It discusses, within the context of a military organization, management forces involved in organizational power, politics, and managerial strategy and tactics. Case studies enhance the learning and communication processes. Three class hours per week are required.

7-301. *American Defense Policy I* Three Credit Hours
(First Semester—First Class Year)

This course includes analysis of the individual's role in the military profession, the changing role of the professional soldier and of the profession itself, civil-military interaction, and policy formulation, organization, and implementation. Three class hours per week are required.

7-302. *American Defense Policy II* Three Credit Hours
(Second Semester—First Class Year)

During the second semester the student continues the study of United States defense policy, with special emphasis on the evolution of strategy, the management of conflict, defense policy-making, military justice, and administrative law. Three class hours per week are required.

7-410. *Flight Instruction Program* One Credit Hour
(Ground School)
(First Class Year)

The Flight Instruction Program ground school is a required course for all pilot-category Air Force contract cadets. It includes ground training in the theory of flight, weather, Federal Aviation regulations, communication techniques, and flight safety practices. Satisfactory completion of the Federal Aviation Administration written private pilot's examination is required for credit. This course is pass-fail only.

7-411. *Flight Instruction Program* Two Credit Hours
(Flying Training)
(First Class Year)

The Flight Instruction Program flying training course is a required course for all pilot-category Air Force contract cadets and is offered only to these cadets. This course includes dual and solo inflight instruction in the Cessna 150 aircraft. This course is pass-fail only.

The credit hours in this department have been redistributed since Academic Year 1974-75. The redistribution has resulted in shifting a portion of the credit hours from the first two years to the last two years. The credit hours in this catalogue apply to the Class of 1979 and subsequent classes. Previous classes receive credit as indicated in the catalogue which was current when they began their freshman year.

Department of Biology

Professors: Reed, Baldwin
Associate Professors: Runey, Crosby, Kelley, Forsythe, Ezell, Seabury
Bowman
Assistant Professors: Porcher, Wallace

Biology is the study of living organisms. The Biology Departmen is structured to offer courses which give the student a better under standing of himself, his relationship with his environment, and th diversity of life. Enrichment courses with minimum prerequisites ar offered in summer and evening programs for interested individuals.

B.S. Biology Major

The core curriculum is arranged to provide courses in physiology field biology, descriptive biology, and developmental biology which meet the needs of a wide variety of programs in biology, medicine secondary school science teaching, social work, wildlife, or conservation. Additional electives in biology may be selected to fulfill the interests of the individual. Preparation for graduate school is encouraged.

The Biology Department participates in the graduate program of The Citadel, offering a major or minor in biology for the Master of Arts in Teaching (MAT) degree. The department also participates in the M.S. degree in marine science offered by the Charleston Consortium of Colleges. Individuals interested in these programs should consult the Graduate School Catalogue.

Premedical

The student who is planning to enter medical school, dental school, veterinary school, or professional school in allied health should choose the B.S. Biology major which will be tailored to his special needs. The core curriculum offered permits the preprofessional student to tailor his plan of study to each area of specialty. The large number of electives available in the Biology Department curriculum makes it possible for students to develop the broad science-humanities knowledge which is so sought after in modern medical or dental applicants.

Course Descriptions for Biology

47-100. *Orientation in Biological Sciences* One Credit Hour

Required of all freshman biology majors.

A course designed to introduce students to the biological sciences. Topics covered will include the history and philosophy of biology, the significance of Greek and Latin terms in biological science, and guidance and counseling in effective study methods. Students will also be exposed to the fields of biology and the career opportunities in them.

Lecture: one hour.

47-103. *Introduction to Botany* Four Credit Hours

An introduction to the plant kingdom; the structure, life processes, reproduction, heredity, evolution, classification, and biological significance of plants.

Lecture: three hours; laboratory: two hours.

47-104. *Introduction to Zoology* Four Credit Hours

An introduction to the animal kingdom; the structure, life processes, reproduction, heredity, evolution, classification, and biological significance of animals.

Lecture: three hours; laboratory: two hours.

47-205. *Cell Biology* Three Credit Hours

Prerequisites: 47-103 and 47-104.

Elective to all majors.

An introduction to the morphological, biochemical, and biophysical properties of protoplasm and their significance in the life processes.

Lecture: three hours.

47-208. *Evolution* Three Credit Hours

Prerequisites: 47-103 and 47-104.

Elective to all majors.

A basic course in the concepts of evolution and population dynamics. The history of evolutionary thought, the processes of organic evolution and systematics are considered.

Lecture: three hours.

47-301. *Invertebrate Zoology* Four Credit Hour

Prerequisite: 47-104.

Elective to all majors.

A general study of the invertebrate animals, including taxonomy morphology, and ecology.

Lecture: two hours; laboratory: four hours.

47-302. *Comparative Vertebrate Anatomy* Four Credit Hour

Prerequisite: 47-104.

Elective to all majors.

Comparative anatomy of certain vertebrate forms.

Lecture: two hours; laboratory: four hours.

47-303. *Human Anatomy* Three Credit Hour

Prerequisite: 47-104.

Required of majors in physical education and elective to majors othe than biology majors.

Foundation material in mammalian anatomy which has been designe to give an understanding of basic human anatomy.

Lecture: three hours.

47-304. *Human Physiology* Three Credit Hours

Prerequisite: 47-104.

Elective to majors other than biology majors.

An introduction of the basic physics and chemistry of life, including a study of the machinery of the regulatory mechanisms of the human body.

Lecture: three hours.

47-305. *Human Anatomy Laboratory* One Credit Hour

Prerequisite: 47-104.

Corequisite: 47-303.

Elective to majors other than biology majors.

Laboratory exercises to illustrate the relationships of structure of mammalian anatomy.

Laboratory: two hours.

47-306. *Human Physiology Laboratory* One Credit Hour

Prerequisite: 47-104.

Corequisite: 47-304.

Elective to majors other than biology majors.

The experimental approach will be emphasized, and students will conduct experiments demonstrating the various physiological processes of ife.

Laboratory: two hours.

47-307. *Animal Behavior (Ethology)* Three Credit Hours

Prerequisites: 47-104 and 51-201.

Elective to all majors.

This course deals with the description, development, and adaptive nature of behavior in free-living animals. The laboratory will emphasize the description and quantification of behavior patterns.

Lecture: two hours; laboratory: two hours.

47-308. *Genetics* Three Credit Hours

Prerequisite: 47-104 or approval of department head.

Elective to all majors.

This course presents in a relatively nontechnical manner the basic facts essential for an understanding of the mode of inheritance in plants and animals with the major emphasis on animals. It is strongly suggested by many medical colleges.

Lecture: two hours; laboratory: two hours.

47-310. *Microbiology* Four Credit Hours

Prerequisite: 47-103 or approval of department head.

Elective to all majors.

A general study of microorganisms and their importance to man with special emphasis on their fundamental life processes. Includes a brief introduction to epidemiology and immunology.

Lecture: three hours; laboratory: three hours.

47-314. *The Vascular Flora of South Carolina* Four Credit Hours

Prerequisite: 47-103 or approval of instructor.

An introductory study of the native vascular flora of South Carolina, emphasizing the identification and collection of native plants. The student will have practice in use of taxonomic keys and in preparation of specimens for The Citadel Herbarium.

Lecture: two hours; laboratory: four hours.

47-315. *Plant Morphology* Four Credit Hours

Prerequisite: 47-103.

Elective to all majors.

The study of the external forms, life histories, evolutionary trends, an economic importance of the lower and higher members of the plan kingdom.

Lecture: two hours; laboratory: four hours.

47-316. *Mycology* Four Credit Hour

Prerequisite: 47-103.

A study of the morphology, classification, and ecology of the fung commonly found in the coastal area of South Carolina.

Lecture: three hours; laboratory: three hours.

47-321. *General Entomology* Three Credit Hour

Prerequisite: 47-104.

An introduction to the study of insects and closely related anthropods, including their ecology, physiology, morphology, taxonomy, adaptations, and immature stages. Laboratory studies will emphasize field collection methods and curatorial techniques.

Lecture: two hours; laboratory: three hours.

47-401. *Embryology* Four Credit Hours

Prerequisite: 47-104.

Elective to all majors.

Embryology of representative vertebrates, including the amphibian and bird, and additional material on mammals.

Lecture: two hours; laboratory: four hours.

47-402. *Descriptive Histology* Four Credit Hours

Prerequisite: 47-104.

Elective to all majors.

A detailed study of the chief types of animal tissues and a description of the histology of organs. Laboratory work includes microscopic study of cells, tissues, and organs of animals, and training in the preparation of microscopic slides.

Lecture: two hours; laboratory: four hours.

47-403. *Mammalian Physiology* Four Credit Hours

Prerequisites: 47-104 and 40-208 (Organic Chemistry)

Elective to all majors.

A systematic study of the general physiology of skin, skeleton, muscle, nervous system, special senses, digestive, circulatory, and respiratory systems, kidney function, hormonal control, and reproduction.

Lecture: three hours; laboratory: three hours.

47-404. *Plant Physiology* Four Credit Hours

Prerequisites: 47-103 and 47-205.

Elective to all majors.

A comprehensive study of the physiological processes of living plants. This course is designed to include both inorganic and organic metabolism while emphasizing the relationships of these processes to the entire plant.

Lecture: three hours; laboratory: three hours.

47-405. *General Parasitology* Three Credit Hours

Prerequisite: 47-104.

Elective to all majors.

Taxonomy, morphology, adaptation, and ecology of parasites affecting man and domestic animals. Life history, vectors, and controls are emphasized.

Lecture: two hours; laboratory: two hours.

47-406. *Ecology* Four Credit Hours

Prerequisite: 47-104.

Elective to all majors.

An introduction to the study of biological interrelationships and the effects of the environment on the structure and function of animal populations. Laboratory will emphasize methods and materials of ecological investigations.

Lecture: two hours; laboratory: four hours.

47-408. *Ornithology* Four Credit Hours

Prerequisite: 47-104.

A study of the structure, function, and ecology of birds. Field trips and bird specimens will give students a working knowledge of birds common to South Carolina.

Lecture: two hours; laboratory: four hours.

47-409. *Marine Biology* Four Credit Hours

Prerequisites: 47-103 and 47-104. 47-312 is recommended but not required.

Elective to all juniors and seniors.

The lectures cover major ecological factors and the fundamentals o oceanography. Laboratory work stresses the familiarities with species taxonomic methods, sampling procedures, experimental design, use o equipment, and data handling.

Lecture: two hours; laboratory: four hours from 1-5 on Monday o Wednesday.

47-410. *Vertebrate Natural History* Four Credit Hours

Prerequisite: 47-104.

An introduction to the classification, ecology, evolution, and distribution of the vertebrates. Laboratory with emphasis on identificatio and field study techniques, especially with respect to the vertebrates of South Carolina.

Lecture: three hours; laboratory: two hours.

47-411. *Senior Seminar* One Credit Hour

Required of all biology majors.

A group study of current topics of biological interest.

Lecture: one hour.

47-413. *Comparative Physiology* Four Credit Hours

Prerequisite: 47-104.

This course deals with the function and interrelationships of the physiological systems in invertebrate and vertebrate organisms. Major emphasis is placed on the role of these systems in the adaptation of organisms to different environmental conditions.

Lecture: three hours; laboratory: three hours.

47-418. *Plant Anatomy* Four Credit Hours

Prerequisite: 47-103.

An examination of cell types and tissue systems found in the vegetative and reproductive organs of vascular plants with reference to their origin, classification, and function. The laboratory will include practice in the methods and procedures of plant microtechnique.

Lecture: two hours; laboratory: four hours.

47-419. *Economic Botany* Three Credit Hours

Prerequisite: 47-103 or approval of instructor.

Elective to all majors.

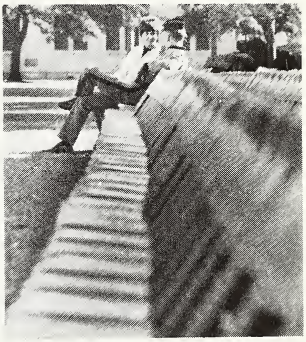
An introductory course in economic botany devoted to the consideration of plants which are useful or harmful to man; their origins and history, botanical relationships, chemical constituents which make them economically important, and their roles in prehistoric and modern cultures and civilizations.

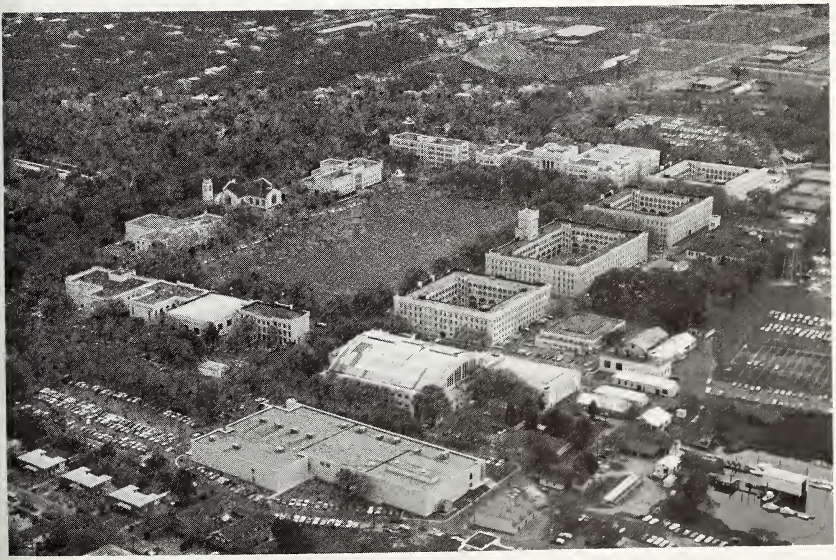
Lecture: three hours.

47-420. *Senior Research Project* Three Credit Hours

Prerequisite: permission of department head and supervising instructor.

Independent study in undergraduate research for serious students planning graduate study.





Department of Business Administration

Professors: Adden, Mettler, Young, Wittschen, Marjenhoff
Associate Professors: Whitney, Masters, Bunch, Patterson, Van Ec
Assistant Professors: Rebber, Mahoney, Bernthal, Legare, Craig
Nelson, Pokryfka, Norvell, Spivey, Bebensee, Strauch, Whitt

Modern business has become so large in the size of industrial units an so complex in organization that a mastery of its theory and practice can n longer be acquired through apprenticeship. Today no single industry o business can give so adequate a training to its beginners as can be obtaine in the department of business administration of a good college. Suc college training is now considered the best method of equipping a man fo success as a business and economic leader.

The purpose of the Department of Business Administration is to prepar the student to take his place in a business enterprise with such genera knowledge of business that he can forego many of the years of experienc which would be required of an apprentice, to prepare him to enter in ful standing the graduate schools of business administration, to pursue further professional business studies, and to take his place in economic society as does a professional man in other fields of endeavor with sufficient knowledge to make sound decisions on economic problems.

The courses described below are not all pure business courses; rather they are designed to offer instruction in subjects commonly given in schools of arts and science, in schools of social science, and in schools of business administration.

5-201. *Economic Origins and Principles* Three Credit Hours
Required of all business administration sophomores.

A study of the origins of capitalism and the development of economic institutions; an introduction to economic principles, including an analysis of the determination of national income and its flunctuations, an introduction to money, banking, and government finance.

5-202. *Economic Principles and Problems* Three Credit Hours

Prerequisite: 5-201.

Required of all business administration sophomores.

A study of value and price, including factors affecting short- and long-run adjustments of the individual firm with respect to prices, costs, and levels of production; value and price determination; market adjustments in competition and monopoly; distribution of income; and current economic problems.

5-205. *Business Statistics I* Three Credit Hours

Prerequisite: completion of required freshman mathematics.

Required of all business administration sophomores.

This course deals with the organization of statistical inquiry and the presentation of its results in tabular and graphic form. Also covered are frequency distributions (with emphasis on the normal), measures of central tendencies, measures of dispersion, theories of sampling and probability, time series, and estimation and hypothesis testing.

5-206. *Business Statistics II* Three Credit Hours

Prerequisite: 5-205.

Elective for business administration majors and others.

A continuation of 5-205, including an introduction to t, Poisson, and Chi-square distributions, tests of significance, regression and correlation analysis, index numbers, and simple and multiple correlation, as well as a more sophisticated exploration of sampling and probability theory.

5-211. *Accounting Principles and Practice I* Three Credit Hours

Required of all business adminstration sophomores.

A study of the fundamentals of accounting, including the analysis and recording of business transactions and the preparation of financial statements; practical problems given in the laboratory.

Lecture: two hours; laboratory: two hours.

5-212. *Accounting Principles and Practice II* Three Credit Hours

Prerequisite: 5-211.

Required of all business administration sophomores.

A continuation of 5-211 with emphasis on accounting systems, partnerships, corporation, and cost accounting theory.

Lecture: two hours; laboratory: two hours.

5-300. *Intermediate Accounting I* Three Credit Hours

Prerequisite: 5-212.

Required of all business administration juniors.

An analysis of the balance sheet and the income statement with particular emphasis on the technique of evaluation of items comprising these statements; practical problems given in the laboratory.

Lecture: two hours; laboratory: two hours.

5-301. *Intermediate Accounting II* Three Credit Hours

Prerequisite: 5-300.

Elective for business administration majors and others.

A continuation of 5-300 with emphasis on balance sheet liabilities and capital, the statement of changes in financial position, and the analysis of financial statements.

Lecture: two hours; laboratory: two hours.

5-305. *Business Law I* Three Credit Hours

Required of all business administration juniors.

A study of the law as it relates to business, including court procedure, cases, decisions, and the Uniform Commercial Code, with primary emphasis on contracts and negotiable instruments.

5-307. *Principles of Labor* Three Credit Hours

Prerequisite: 5-202.

Required of all business administration juniors.

An analysis of the worker's position in modern industry and the effects of industrial production on the worker's social position; introduction to the problems of wages, hours, working conditions, child labor, industrial accidents, unemployment, trade unions, and collective bargaining; economic problems of the worker under current labor legislation.

5-308. *General Insurance* Three Credit Hours

Elective for business administration majors and others.

A course in predictable business risks and the methods of minimizing these risks through insurance; intelligent planning of a program of coverages and rates of life, fire, and casualty insurance.

5-309. *Marketing Principles* Three Credit Hours

Prerequisite: 5-202.

Required of all business administration juniors.

The activities necessary to effect the distribution of goods from producer to consumer, consumer behavior, the marketing institutions, the marketing functions, examination of important marketing policy and problem areas.

5-310. *International Trade* Three Credit Hours

Prerequisite: 5-202.

Elective for business administration majors and others.

An analysis of the theoretical principles underlying international specialization and exchange, the making of international payments, the relation of international payments to national income, and the application of these principles to recent historical developments and to current national policies. An introductory survey is provided to the network, composition, and sources of world trade.

5-311. *Government Finance* Three Credit Hours

Prerequisite: 5-202.

Required of all business administration juniors.

A survey of the theory and practice of taxation, public revenue, public expenditure, and public debt; budgeting and fiscal policy; general principles and practices of income taxes, property taxes, consumption taxes, death taxes, and corporation and other business taxes.

5-312. *Taxation* Three Credit Hours

Prerequisite: 5-212.

Required of all business administration juniors.

A study of the basic principles of income taxation, including a thorough analysis of the present Federal law dealing with both individuals and corporations.

5-313. *Intermediate Microeconomic Theory* Three Credit Hours

Prerequisite: 5-202.

Elective for business administration majors and others.

A more advanced treatment of value theory. The production and consumption activities of individual economic units are analyzed. Areas of concentration include the theory of consumer behavior, cost analysis, production and distribution theory, general equilibrium, and welfare criteria.

5-314. *Intermediate Macroeconomic Theory* Three Credit Hours

Prerequisite: 5-202.

Elective for business administration majors and others.

A course designed to give the student a comprehensive understanding of national income, its measurement and analysis, including a study of business cycles, economic growth, and economic policies.

5-316. *Communicating in Business* Three Credit Hours

Prerequisite: 5-202.

Elective for business administration majors and others.

A study of communication in business as related primarily to the writing of business reports, research procedures, and business letters. The course is designed to stress clarity, conciseness, and logical presentation.

5-318. *Business Law II* Three Credit Hours

Prerequisite: 5-305.

Elective for business administration majors and others.

A continuation of Business Law I, 5-305, with emphasis on creditors' rights, agency and employment, and personal and real property.

5-321. *Business Finance I* Three Credit Hours

Prerequisite: 5-212.

Required of all business administration juniors.

A survey of forms of business organization and of business financial policies and methods of planning and control; an analysis of the factors affecting the capital structure of corporations and the proper use of different types of securities; budgetary procedures.

5-322. *Business Finance II* Three Credit Hours

Prerequisite: 5-321.

Required of all business administration juniors.

Principles and practices of the financing of non-financial corporations; emphasis on the role of the finance executive in a business organization; problems and cases to demonstrate solutions to managerial decisions involving cash flow and capital structure analysis.

5-325. *Principles of Management* Three Credit Hours

Required of all business administration juniors.

A survey of the evolutionary and comprehensive principles of management applicable to all forms of business; and exploration of the mangement process as the performance of planning, organizing, directing, nd controlling complex business situations.

-330. *Personal Finance* Three Credit Hours

Elective for non-business majors.

A course dealing with aspects of family finance, including budgeting, avings programs, insurance protection, installment buying, home planing and financing, investments in stocks and bonds, and estate planing.

-401. *Cost Accounting* Three Credit Hours

Prerequisite: 5-300.

Elective for business administration majors.

A course in the principles of cost accounting, including the accounting or materials, labor, and overhead under the job-order, process, and tandard cost systems; practical problems given in the laboratory.

Lecture: two hours; labratory: two hours.

-402. *Advanced Accounting Problems* Three Credit Hours

Prerequisite: 5-300.

Elective for business administration majors.

A study of advanced accounting problems relating to partnerships, onsolidations, consignments, installment sales, branch accounting, ankruptcy, and fund accounting.

Lecture: two hours; laboratory: two hours.

5-404. *Investments* Three Credit Hours

Prerequisite: 5-322.

Elective for business administration majors.

A study in personal finance and security analysis; buying and selling procedure; stock exchanges; and the relative merits of types of securities as an investment or speculation.

5-405. *Marketing Management* Three Credit Hours

Prerequisites: 5-309 and 5-325.

Required of all business administration seniors.

Marketing management primarily for the manufacturer; planning the product; planning for promotion; investigation of the market; pricing and price policy; planning the sales organization; management of sales personnel.

5-406. *Transportation* Three Credit Hou

Prerequisite: 5-405.

Elective for business administration majors.

A study of the history, geography, and economics of all forms transportation; transport pricing; public regulations; public policy; cu rent problems such as competition between modes of transportation.

5-407. *Money and Banking* Three Credit Hou

Prerequisite: 5-311.

Required of all business administration seniors.

The nature and functions of money; the various monetary standards; th development of our monetary system; the factors affecting the value money; methods and objectives of money and credit control; internationa exchange; analysis of recent developments in money and credit.

5-408. *Bank Management* Three Credit Hou

Prerequisite: 5-407.

Elective for business administration majors.

A study of the development and structure of the commercial bankin system; a description and analysis of the operations of our commercia banks and an investigation of the techniques and principles followed b commercial banks in the performance of their many functions.

5-409. *Personnel Management* Three Credit Hou

Prerequisites: 5-307 and 5-325.

Elective for business administration majors and others.

A contemporary course in the management of human resources, d signed to recognize and evaluate the change to the behavioral scienc approach in the study of personnel administration, to include the prir ciples and practices of manpower development and performance in provement.

5-410. *Production Management* Three Credit Hou

Prerequisites: 5-202, 5-205, 5-212, and 5-325.

Required of all business administration seniors.

Analysis of the production function as the planning, organizing directing, and controlling of the required activities and resources necessar to produce products and services. Discussion of managerial problems i the areas of plant design and location, production standards, operation planning and control, product development, materials handling, an inventory control.

5-416. *Auditing* Three Credit Hours

Prerequisite: 5-300.

Elective for business administration majors and others.

A study of auditing procedures with the emphasis on how to conduct an audit in a logical, proper manner, applying acceptable auditing standards. A coverage of internal controls and accounting knowledge as applied to auditing.

Lecture: two hours; laboratory: two hours.

5-418. *Marketing Problems* Three Credit Hours

Prerequisite: 5-405.

Elective for business administration majors.

An advanced course in marketing management with emphasis on cases and problems involving marketing research, promotion, distribution, consumer behavior, and government regulations.

5-420. *Seminar in Business Administration* Three Credit Hours

Prerequisite: approval of course instructor and department head.

Elective for business administration majors.

This course is designed to provide students of exceptional ability and background with the opportunity to explore a variety of advanced, business-oriented, analytical techniques. Specific topics covered within this course will be at the discretion of the instructor, under the supervision of the department head.

5-422. *Business Policy* Three Credit Hours

Prerequisites: 5-300, 5-322, 5-325, and 5-405.

Elective for business administration majors.

A capstone course designed to give the student practice in integrating the numerous theory courses in all phases of business management. In the role of a top manager, the student applies these theories to the solution of problems in practical business cases. Throughout the semester the student makes decisions to direct the operation of a simulated business in a competitive market.

5-490. *Essentials of Economics* Three Credit Hours

Prerequisite: permission of department head.

An accelerated foundation course in economic principles for MBA students. The course includes the theory of supply and demand, price theory, national income theory, monetary theory, and contemporary problems.

5-499. *Introduction to Accounting* Three Credit Hours

Prerequisite: permission of department head.

An accelerated foundation course in fundamental accounting for MBA students. The course includes the accounting cycle for proprietorships, accounting for depreciation and bad debts, corporation accounting, and other basic accounting principles.

Department of Chemistry

Professors: Wilkinson, Hummers, Ballentine, Jumper
Associate Professors: Medbery, Leopold, Browning
Assistant Professors: Rushing, Braun, May

The course of study for students majoring in chemistry is designed to prepare them to fill positions as chemists in commercial laboratories or as control chemists in industrial plants, and to provide the basic training for them to enroll as graduate students in full standing at the leading universities.

The courses of study embody training in the four fundamental subdivisions of the science: inorganic, organic, analytical, and physical chemistry.

The department occupies Byrd Hall, completed in 1968, containing 52,000 square feet, classrooms, a lecture theater, laboratories, a centrally located library, and conveniently located stockrooms, preparation rooms, and balance rooms.

A chapter of Student Affiliates of the American Chemical Society is active at The Citadel. The Department of Chemistry is accredited by the American Chemical Society.

B.S. Chemistry Major

Students majoring in the B.S. Chemistry program are required to take all of the courses offered by the department for chemistry majors and also 30-131 (Analytic Geometry and Calculus), 30-132 (Analytic Geometry and Calculus), 30-231 (Intermediate Calculus), and 30-232 (Differential Equations); 90-101 (Elementary German), 90-102 (Elementary German), 91-203 (Scientific German), and 91-204 (Scientific German); and 26-110, 26-211, and 26-212 (Physics for Engineers and Physical Scientists).

B.A. Chemistry Major

The B.A. Chemistry course of study permits many elective course and provides great flexibility to the student to select courses which wi provide him with the particular education suited to his needs. The candidate must take 33 hours in chemistry, namely, 40-101, 40-102, 40-111 40-112, 40-207, 40-208, 40-217, 40-218, 40-300, 40-301, 40-429, 40-43 and three chemistry electives; 15 credits in English, namely, 80-101 80-102, 80-201, 80-202, and 80-205 or 80-416; 12 credits in physic namely, 26-205, 26-206, 26-207; 30-103 (Pre-Calculus Mathematic and 30-104 (Finite Mathematics) or 30-201 and 30-202 (Introductor Calculus); 70-101 and 70-102 (A Survey of American History), 12 credit in a modern language; 15 credits in approved electives, and 12 credits i elective courses.

Premedical Program

Students who plan to enter medical school or allied professiona schools such as dental school or veterinary medical school should tak the B.A. Chemistry program and choose such electives as 47-302 (Comparative Anatomy) and 47-401 (Embryology). It is also strongly recommended that they take, if possible, 51-201 (General Psychology), 51-30 (Abnormal Psychology), 30-201 and 30-202 (Introductory Calculus) 47-308 (Genetics), 47-402 (Descriptive Histology), and 47-403 (Mammalian Physiology). Students who plan to enter medical school upo completion of their baccalaureate degrees should acquaint themselve with the requirements of the medical schools of their choice and tailo their programs accordingly. An extremely worthwhile reference to th entrance requirements for all medical schools in the United States an Canada is *Medical School Admission Requirements* published eac year by the Association of American Medical Colleges, One Dupon Circle, N.W., Washington, D.C. 20036.

All students who plan to attend medical school not only must complete certain prescribed work but also must show an aptitude for medical studies. The Medical College Admissions Tests, prepared by the Association of American Medical Colleges, must be taken by all students who expect to apply for admission to a medical college.

In addition to students wishing to pursue higher education in medicine, dentistry, or veterinary medicine, those students wishing to pursue a career in secondary school chemistry teaching or other areas such as chemical sales which use a background of chemical training should take the B.A. Chemistry program.

Requirements for Non-Science Students

Non-science students, in order to complete the requirements for a physical science in chemistry, must complete a four-course set, i.e. 40-101, 40-111, 40-102, 40-112 or 40-103, 40-113, 40-104, 40-114.

40-101. *General Chemistry* Three Credit Hours

Corequisite or Prerequisite: 40-111.

Required of all freshmen majoring in the sciences, engineering, or mathematics; elective to others.

Theoretical and descriptive chemistry, including the elements of modern chemical theory and discussion of some of the more common industrial processes. Slide rules or electronic calculators with logarithmic capability are required.

Lectures and recitations: three hours a week.

40-102. *General Chemistry* Three Credit Hours

Prerequisite: 40-101.

Corequisite or Prerequisite: 40-112.

Required of all freshmen majoring in mathematics, civil engineering, or the sciences; elective to others.

A continuation of 40-101 with emphasis on the theoretical aspects of chemistry and discussion of some of the more common industrial processes. Slide rules or electronic calculators with logarithmic capability are required.

Lectures and recitations: three hours a week.

40-103. *Introduction to Chemistry* Three Credit Hours

Corequisite or Prerequisite: 40-113.

Elective for non-science majors only.

The first semester of a terminal course designed for students who do not expect to take any other course in chemistry. The course will cover the essentials of chemistry on a less mathematical level than 40-101. Chemical processes of products used in everyday life will be stressed.

Lecture: three hours a week.

40-104. *Introduction to Chemistry* Three Credit Hours

Prerequisite: 40-103.

Corequisite or Prerequisite: 40-114.

Elective for non-science majors only.

The concluding semester of a terminal course in chemistry designed for students who do not expect to take any other course in chemistry. Amor the topics to be covered will be the relationship of chemistry to ecology, tl uses and abuses of drugs, the role of chemistry in modern manufacturin processes.

Lecture: three hours a week.

40-106. *Principles of Chemistry* Three Credit Hou

Prerequisites: 40-101 and 40-111.

For electrical engineering majors only.

A continuation of 40-101 with emphasis on the industrial applications chemistry and on the theoretical aspects of these applications.

Lectures and recitations: three hours a week.

40-111. *General Chemistry Laboratory* One Credit Hou

Prerequisite or Corequisite: 40-101.

Required of all freshmen majoring in the sciences, engineering, o mathematics; elective to others.

This laboratory course closely parallels the lecture material in 40-101 Emphasis will be placed on quantitative experiments showing the sto chiometric relationships in chemical reactions.

Laboratory: two hours a week.

40-112. *General Chemistry Laboratory* One Credit Hou

Prerequisites: 40-101 and 40-111.

Corequisite or Prerequisite: 40-102.

Required of all freshmen majoring in sciences, civil engineering, o mathematics.

Fundamental techniques in qualitative and quantitative analysis.

Laboratory: two hours a week.

40-113. *Introduction to Chemistry Laboratory* One Credit Hou

Prerequisite or Corequisite: 40-103.

Elective to non-science majors only.

An introduction to laboratory work. Experiments will parallel, a closely as possible, the material covered in 40-103. Emphasis will be placec on basic laboratory techniques. Demonstrations will be used to illustrat important chemical concepts.

Laboratory: two hours a week.

40-114. *Introduction to Chemistry Laboratory* One Credit Hour

Prerequisites: 40-103 and 40-113.

Corequisite or Prerequisite: 40-104.

Elective to non-science majors only.

A continuation of 40-113. Experiments and demonstrations will parallel, as closely as possible, the material covered in 40-104.

Laboratory: two hours a week.

40-204. *Implications of Chemistry* Three Credit Hours

Will not count towards the fulfillment of the physical science requirement. An elective course for all students except those in the natural sciences or engineering.

A course devoted primarily to a study of chemistry and the environment. Both the beneficial and damaging effects of various chemical industries on the environment will be covered.

Lecture: three hours.

40-207. *Organic Chemistry* Three Credit Hours

Prerequisites: satisfactory completion of 40-101, 40-111, 40-102, and 40-112.

Corequisite or Prerequisite: 40-217.

Required of all sophomores majoring in chemistry.

A study of the aliphatic and aromatic series of hydrocarbons and their derivatives with emphasis on reaction mechanisms and interconversions among the various classes of compounds.

Lecture: three hours a week.

40-208. *Organic Chemistry* Three Credit Hours

Prerequisites: 40-207 and 40-217.

Corequisite or Prerequisite: 40-218.

A continuation of 40-207.

Lecture: three hours a week.

40-217. *Organic Chemistry Laboratory* One Credit Hour

Corequisite or Prerequisite: 40-207.

A course which emphasizes the development of skill in the use of basic laboratory techniques through the completion of a series of experiments involving various types of reactions such as substitution, elimination, and addition reactions with an introduction to modern instrumentation such as the IR spectrophotometer, gas chromatograph, and NMR spectrometer.

Laboratory: three hours a week.

40-218. *Organic Chemistry Laboratory* One Credit Hour

Prerequisites: 40-207 and 40-217.

Corequisite or Prerequisite: 40-208.

A continuation of 40-217 with the emphasis on the synthesis, reactions, and identification of the various classes of organic compounds.

Laboratory: three hours a week.

40-300. *Quantitative Analysis* Four Credit Hours

Prerequisites: 40-102 and 40-112, 30-103, and 30-104 or equivalents, or permission of the department head.

Required of all juniors majoring in chemistry; elective to others.

The theory and practice of quantitative analysis, with emphasis on volumetric determinations. Instruments will be used for some procedures.

Lecture: two hours a week; laboratory: four hours a week.

40-301. *Survey of Physical Chemistry* Three Credit Hours

Prerequisites: 40-102 and 40-112, 30-103, and 30-104 or equivalents. (40-300 is recommended, but not required.)

Required of B.A. Chemistry majors; elective to others. Not open to B.S. Chemistry majors.

An introduction to the principal topics of physical chemistry, with emphasis on those related to life processes.

Lecture: three hours a week.

40-302. *Instrumental Methods* Four Credit Hours

Prerequisites: 40-300 and 40-305, or permission of the department head.

Corequisite: 40-306.

Required of all juniors majoring in B.S. Chemistry; elective to others.

The theory and practice of methods involving such instruments as colorimeters, electrophotometers, infrared, visible and untraviolet spectrophotometers, polarographs, pH meters, titrimeters, electrodeposition apparatus, recorders, vapor phase chromatographs, gamma ray scintilliation spectrometer, calorimeters, and other modern instruments.

Lecture: two hours a week; laboratory: four hours a week.

40-305 and 40-306. *Physical Chemistry* Three Credit Hours Each Semester

Prerequisites: 30-232 or 30-202 and 26-211 or 26-206.

Corequisite: 40-300.

Required of all juniors majoring in B.S. Chemistry; elective to others.

A study of the properties of solids, liquids, and gases, and of their relation to chemical constitution.

Lecture: three hours a week.

40-308. *Chemical Literature* One Credit Hour

Offered every other year.

Required of all students majoring in B.S. Chemistry; elective to others. An introduction to the effective use of chemical literature.

Lecture: one hour a week.

*40-309. *Special Topics in Analytical Chemistry* Three Credit Hours

Prerequisites: 40-300 and 26-206 or 26-211.

An elective course designed to familiarize students with the entire field of analytical chemistry with emphasis on modern methods of analysis.

Lecture: three hours a week.

*40-310. *Survey of Nuclear Science* Three Credit Hours

Prerequisites: 40-300, 30-103, and 30-104 or equivalents, 26-206 or equivalent, or permission of the department head.

Elective course; not open to physics majors.

A survey of the field of nuclear science particularly as applied to chemistry.

Lecture: three hours a week.

*40-312. *Chemical Bonding and Structure* Three Credit Hours

Prerequisites: 40-102, 40-112, 30-103, and 30-104.

Not open to B.S. Chemistry majors; elective to others.

A one-semester course designed to introduce the student qualitatively to the modern thoughts concerning the basic theories and rules governing chemical bonding and molecular structure. A simplified discussion of bonding in the simple organic and inorganic compounds as well as some complex inorganic ions.

Lecture: three hours a week.

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*Offered when demand warrants.

40-315 and 40-316. *Physical Chemistry Laboratory* One Credit Hou
Each Semeste

Prerequisite: 30-232.

Corequisites or Prerequisites: 40-305 and 40-306.

Required of all juniors majoring in B.S. Chemistry; elective to others.

This laboratory course is closely correlated with the lecture work in 40-305 and 40-306. It is designed to provide an introduction of the basic laboratory methods of Physical Chemistry, and to illustrate principles of thermodynamics, equilibrium, and kinetics.

Laboratory: three hours a week.

40-401 and 40-402. *Inorganic Chemistry* Three Credit Hours
Each Semester

Prerequisites: 40-207 and 40-306.

Required of all seniors majoring in B.S. Chemistry; elective to others.

A study of the principles and reactions of inorganic chemistry; atomic theory, chemical bonds, periodic system, acid-base theories, complex ions, and organo-metallic compounds.

Lecture: three hours a week.

40-403. *Special Topics in Organic Chemistry* Three Credit Hours

Prerequisites: 40-207, 40-208, 40-217, and 40-218.

Required of B.S. Chemistry majors; elective to others.

A study of certain topics not covered in the introductory courses including carbohydrates, amino acids, peptides and proteins, terpenes, heterocyclic compounds, and some sterols and steroids, nuclear magnetic resonance spectroscopy, and mass spectra.

Lecture: three hours a week.

40-404. *Advanced Topics in Organic Chemistry* Three Credit Hours

Prerequisites: 40-207, 40-208, 40-217, and 40-218.

Elective course.

Pericyclic reactions, photochemistry, ultraviolet and infrared spectroscopy, and such classical topics as dicarboxylic acids, hydroxy acids, keto acids, an polynuclear hydrocarbons.

Lecture: three hours a week.

40-408. *Qualitative Organic Analysis* Four Credit Hours

Prerequisites: 40-207, 40-208, 40-217, and 40-218.

Required of all seniors majoring in B.S. Chemistry; elective to others.

The classification, the study of type reactions, and the identification of pure organic compounds and mixtures of organic compounds.

Lecture: one hour a week; laboratory: six hours a week.

40-409. *Biochemistry* Three Credit Hours

Prerequisites: 40-207, 40-208, 40-217, and 40-218.

Elective for B.A. and B.S. Chemistry majors.

An overview of the entire field of biochemistry covering amino acids and proteins, enzymes and coenzymes, lipids, nucleic acid structure, vitamins and minerals, nutrition, and blood and body fluids.

Lecture: three hours a week.

40-410. *Biochemistry* Three Credit Hours

Prerequisite: 40-409.

A continuation of 40-409 with particular emphasis on biochemical processes in depth.

Lecture: three hours a week.

40-411. *Physical Chemistry Topics* Three Credit Hours

Prerequisites: 40-207, 40-217, and 40-306.

Required of all seniors majoring in B.S. Chemistry.

Further exploration of problems and theory of physical chemistry in areas not fully treated in 40-305 and 40-306.

Lecture: three hours a week.

40-412. *Inorganic Preparations* Two Credit Hours

Prerequisites: 40-302 and 40-305.

Required of all seniors majoring in B.S. Chemistry.

Techniques employed in several widely different inorganic syntheses.

Lecture: one hour a week; laboratory: two hours a week.

40-419. *Senior Research* Two Credit Hours

Required of all B.S. Chemistry majors, elective to others with permission of the department head.

An introduction to research, including the library search on a topic of the student's choosing. A written report will be required. All work will be supervised by two members of the Chemistry Department faculty.

40-420. *Senior Research Project* One Credit Hour

Required of all B.S. Chemistry majors; elective to others with permission of department head.

A laboratory research project and accompanying report on an approved topic of the student's choosing. All work will be supervised by two members of the Chemistry Department faculty.

40-429. *Senior Seminar* One Credit Hour

Required of all chemistry majors.

A group study of current topics of chemical interest. Students will present topics of their choice to the senior chemistry majors and Chemistry Department faculty.

40-430. *Senior Seminar* Zero Credit Hours

Required of all chemistry majors.

A continuation of 40-429.

Geology

The geology division operates within the administration of the Chemistry Department to offer electives to upperclassmen and a somewhat modified elementary geology course, 45-303, for juniors in civil engineering.

Geological investigations and the subject matter of geology cover many fields directly related to the understanding of the physical earth and universe, the biological earth, and the economics of societies. Facilities are available within the Chemistry Department at The Citadel for student research in geochemistry at the senior level.

45-201. *Introduction to Earth Science I* Four Credit Hours

Elective to upperclassmen.

Minerals and ores; rocks and rock-forming processes; structural geology; processes which shape the surface of the earth; elementary physical oceanography.

Lecture: three hours a week; laboratory: two hours a week.

45-202. *Introduction to Earth Science II* Four Credit Hours

Prerequisite: 45-201 or 45-303 or permission of the instructor.

Elective to upperclassmen.

Interior of the earth and internal processes which deform the crust of the earth; earthquakes; ancient life and the practical use of fossils in geology; geologic history of North America; continental drift and other controversial topics.

Lecture: three hours a week; laboratory: two hours a week.

45-303. *Geology for Engineers* Three Credit Hours

Required of and limited to juniors in civil engineering.

Minerals and rocks; structural geology; surface and ground water; other processes which shape the surface of the earth and their influence on engineering practice; earthquakes; geophysical exploration; geologic maps.

Lecture: two hours a week; laboratory two hours a week.

*45-304. *Marine Geology* Three Credit Hours

Prerequisite: 45-201 or 45-303 or permission of the instructor.

Not to be substituted for 45-202.

Elective to upperclassmen.

Techniques of physical oceanography; shapes and evolution of ocean basins and floors; variations in properties of sea water; waves; tides; currents; beach erosion; estuaries; sedimentation; changes in sea level.

Lecture: three hours a week.

*45-305. *Geology of the Carolinas* Three Credit Hours

Prerequisite: 45-201 or 45-303 or permission of the instructor.

Not to be substituted for 45-202.

Elective to upperclassmen in all majors.

Geologic provinces—rocks, minerals and fossils present; structural relationships; historical framework; economic potential; engineering aspects; evolution of land forms.

Lecture: three hours a week.

*45-308. *Environmental Geology* Three Credit Hours

Prerequisite: none (45-201 or 45-303 is recommended).

Not to be substituted for 45-202.

Elective to upperclassmen.

Relationships between activities of man and physical aspects of natural environments. Factions considered include: mining and strip mining; removal and combustion of fossil fuels; urban, industrial, and radioactive waste disposal; urban sprawl vs. natural resources; destruction of marshes and other local problems. Open class discussion of problems is encouraged.

*Offered when demand warrants.

Department of Civil Engineering

Professor: Himelright
Associate Professors: Clock, Evans
Assistant Professors: Smith, Ryan, Dion, Stout, Sprovero

The Civil Engineering Department's objective is to provide the basic educational requirements of the profession of civil engineering, prepare students to pursue advanced work in graduate schools of engineering, and to insure an educational background broad enough to meet the requirements of good citizenship and service in other fields requiring leadership and problem-solving ability.

The four-year program begins with courses which provide a foundation of knowledge and skill in the basic arts and sciences. Limited specialization in engineering starts during the sophomore year. In the junior and senior years, the time is devoted essentially to basic professional subjects. Throughout the four years, the program emphasizes the development of habits of orderly study, investigation, sound reasoning, and problem solving, rather than the mere acquisition of factual information. It is stressed that the engineer is a professional man thoroughly grounded in engineering science and technology but also alive to the social, economic, and ecological implications of his professional activities.

The civil engineering curriculum is accredited by the Engineers' Council for Professional Development.

Each year the curriculum is augmented by off-campus educators and engineers who lecture and moderate seminars in engineering specialties. Students' sources of knowledge are broadened by participation in these seminars and the student chapters of the American Society of Civil Engineers and Sigma Epsilon Pi (honorary engineering society).

LeTellier Hall, the main civil engineering building, was specially designed for the needs of civil engineering education and contains, in addition to laboratories and classrooms, the John Anderson Memorial Library (containing engineering technical works, periodicals, and reference materials) an assembly room with appropriate audiovisual aids for special lectures and society meetings, a computation room equipped with advanced programmable calculators and an IBM card-punch machine for student use, and well-equipped and well-lighted drafting rooms.

The following major laboratories are provided:

Concrete laboratory: A large curing room, mixing equipment, a concrete block, air entraining measuring apparatus, and scales and other minor equipment are provided in this laboratory. Testing is done with materials laboratory machines.

Materials testing laboratory: Major items of equipment include a 400,000-pound universal hydraulic testing machine with a clearance of 10 feet for column testing and with a 36-inch-wide working platform, a 60,000-pound hydraulic universal testing machine with automatic stress-strain recorder, a 10,000-inch-pound torsion machine, and equipment for making tension, compression, hardness, fatigue, shearing, cold bend, sonic, and most accepted and significant tests on metals, concrete, wood, and other structural materials.

Bituminous materials testing laboratory: Contains equipment for making the significant quality control and identifications tests on asphalt cements, cutback asphalts, asphalt emulsions, and road tars. Equipment for the design, mixing, compaction, and testing of asphaltic concrete paving mixtures by the Marshall and other methods is included.

Soil mechanics laboratories: The two soils laboratories are equipped with both scale and deadweight consolidometers, triaxial and direct shear machines, unconfined compression machines, permeameters, Atterberg limit equipment, Proctor and modified AASHTO compaction apparatus, standard sieves, soil hydrometers, C.B.R. apparatus, and other equipment needed for tests and experiments with soils.

Fluid mechanics laboratory: Equipment is provided for a wide variety of experiments and tests involving the flow of water through pipes, meters, orifices, over weirs, and through a Parshall flume. A 500-gpm flow is provided through a special constant head distribution system for these and other experiments. Other major items of equipment include a head loss and flow measurement fluid circuit apparatus, a Reynolds number device, a hydraulic demonstration unit permitting experiments involving many phenomena of pipe and open channel flow, and a centrifugal pump equipped to measure input and output of energy.

Environmental engineering laboratory: Equipment is provided fo water analysis determinations (primarily according to "Standard Methods") of pH, alkalinity, hardness, turbidity, and color, as well as fo determinations of special channel radicals and bacteriological examinations. For waste water analysis, biochemical oxygen demand and solid content may be determined. The equipment includes incubators, muffl furnace, pH meters, demineralizer, electrophotometric devices, autoclave, clean room sampling kit for determination of particulate contamination, constant temperature refrigerator, drying oven, water stil and essential minor tools and equipment.

Other engineering equipment: Adequate equipment is available fo the courses in graphic science, surveying, photogrammetry, as well as fo the junior and senior courses. This equipment includes drafting machines planimeters, rectoplanograph, sterocomparagraphs, steroscope radia plotters, mechanical triangular set, pocket steroscopes, height finders, an adequate steroscopic aerial photographs. Transits, levels, and a variety o theodolites, plane tables, compasses, sextants, level and stadia rods chains, tapes, and associated minor equipment are used in the surveyin course.

Degree: The degree of Bachelor of Science in Civil Engineering (B.S in C.E.) is awarded to those who successfully complete the program o studies outlined on pages 108 and 109.

The nontechnical electives must be in the field of humanities. The technical and the nontechnical electives must have the approval of the Department of Civil Engineering, and the requirements of the department offering the elective must be met.

10-101 and 10-102. *Graphic Science* Two Credit Hours
Each Semester

Required of all civil engineering freshmen.

Use and care of drawing instruments; proper weights and types of lines for clear, clean-cut, and complete graphical representation; usefu geometrical construction; freehand sketching, orthographic projection; auxiliary and sectional views; pictorial representation with emphasis on isometric drawing; dimensioning; true lengths and shapes; problems on points, lines and planes to be solved by the method of auxiliary planes in third angle projection; and drawing related to typical civil engineering problems. Problems are selected with a view to emphasizing practical applications and developing the ability of the student to think in three dimensions. Development of reasonable skill in lettering. Supplemented with afternoon seminars by CE faculty members covering work of practicing engineers.

Laboratory: four hours.

10-202. *Statics* Three Credit Hours

Prerequisites: 26-110 (Physics for Engineers and Physical Scientists) and 10-102 or concurrent with 10-102.

Required of all civil engineering sophomores.

Scalar and vector solutions of problems in statics; principles of statics; resultants, reactions, and equilibrium of forces; analysis of simple trusses, friction; centroids and centers of gravity; and moments of inertia.

Lecture: two hours; laboratory: two hours.

10-204. *Photogrammetry* One Credit Hour

Prerequisite: 10-206 or concurrent with 10-206.

Required of all civil engineering sophomores.

An elementary course in aerial photography and topographic mapping; methods of topographic projection; planning topographic flights; basic photo-interpretation; geometric properties of photographs; radial line plotting; photographic measurements.

Laboratory: two hours.

10-205 and 10-206. *Surveying* Four Credit Hours Each Semester

Prerequisites: For 10-205: 10-101. For 10-206: 10-205 and 30-131 (Analytic Geometry and Calculus).

Required of all civil engineering sophomores.

Linear movements; leveling; compass and transit; calculating machines; theory of errors; land surveying and boundary laws; latitudes and departures; areas and volumes; stadia; plane table; route surveys; vertical, circular, and transition curves; State plane coordinates; standard map projections; Polaris and solar observations; introduction to the use of electronic computers and the solution of problems related to surveying and other fields of civil engineering. A solar or Polaris observation is required during the 10-206 semester.

Lecture: three hours. Field two hours in addition to the required Polaris observation.

10-301. *Dynamics* Three Credit Hours

Prerequisites: 10-202 and 30-132 (Analytic Geometry and Calculus).

Required of all civil engineering juniors.

Kinematics and kinetics of particles in translation and rotation and of rigid bodies in plane motion with emphasis on the special cases of translation and rotation.

Lecture: three hours.

10-303. *Mechanics of Materials* Four Credit Hours

Prerequisites: 10-202 and 30-132 (Analytic Geometry and Calculus).

Required of all civil engineering juniors.

Elastic properties of structural materials; internal stresses and strains; torsion; flexure; shear; riveted and welded joints; shear and moment diagrams; combined stresses; beam deflections; unsymmetrical bending; principal stress; columns; supplemented by 10-307, taken concurrently or subsequently to 10-303.

Lecture: three hours; laboratory: two hours.

10-305. *Transportation Engineering* Three Credit Hours

Prerequisite: 10-206.

Required of all civil engineering juniors.

Development and interrelationships of United States transportation systems; current problems and transportation projects; planning, financing, and design of land transportation, airport, and seaport facilities. Includes: road and railroad geometric and drainage design; airport layout and design; and design of harbors and port facilities. Problems are solved by both manual and computer methods.

Lecture: three hours.

10-306. *Highway Engineering* Three Credit Hours

Prerequisite: 10-305.

Required of all civil engineering juniors.

Alignment and earthwork drawings and computations; earthwork operations, routine tests of highway materials, bituminous and non-bituminous; pavement and base thickness design; design and testing of asphalt paving mixtures; construction of roadway elements; construction surveys. Computer technology is employed in solving design problems.

Lecture: two hours; laboratory: two hours.

0-307. *Materials Laboratory* One Credit Hour

Prerequisites: 30-132, 10-202, and 10-303, or concurrent with 10-303.

Required of all civil engineering juniors.

Laboratory supplement to 10-303. Introduction to the use of testing nachines and equipment; strength and deformation measurements of ferous and non-ferous metals, concrete and wood; properties of materials as determined by test results; compression; tensile and bending specimen ests; torsion; use of SR-4 electric strain gauge; use of ASTM specifications and test procedure.

Laboratory: three hours.

10-308. *Structural Analysis I* Three Credit Hours

Prerequisites: 10-303 and 30-231 (Intermediate Calculus).

Required of all civil engineering juniors.

Analysis of simple structures; reactions; shear and moment for static and moving loads on beams; stresses in members of truss structures; force systems in space including space frames; influence line diagrams; plastic theory; and analysis of steel beams.

Lecture: three hours.

10-312. *Computer Application for Civil Engineering* One Credit Hour

Prerequisite: 10-206.

Instruction in digital computer language and systems using problems chosen from civil engineering fields and fields clearly related thereto. Practical work is emphasized.

Lecture: one hour.

10-314. *Engineering Administration* Two Credit Hours

Prerequisite: completion of all freshman work.

Required of all civil engineering juniors.

An elementary course in engineering administration with primary attention given to the basic principles of engineering economy as applied to the economic analysis of the costs of construction and operation of various engineering works. In addition, the course covers engineering ethics as applied by practicing engineers and introduces elements of contract law and the law of agency.

Lecture: two hours.

10-401. *Concrete Laboratory* One Credit Hour

Prerequisites: 10-307, 10-312, and 30-232 (Differential Equations).

Required of all civil engineering seniors.

Design, preparation, and testing of portland cement concrete mixes for a desired quality of concrete using both plain portland cement concrete and concretes containing the various commonly used admixtures; test specimens cured under controlled temperatures and moisture conditions; close attention given to the influence of the quality and grading of the aggregates and to other features affecting the properties of the concrete ultimately forming a structure; study and discussion of specifications governing good construction practice in handling and placing aggregates and concrete; and the control and inspection of same.

Laboratory: two hours.

10-402. *Soil Mechanics Laboratory* One Credit Hour

Prerequisites: 10-401; 10-410 to be taken concurrently.

Required of all civil engineering seniors.

Classification, control, and soil strength tests to predict suitability of soil for use in earth dams, roads, and foundations, to include specific gravity, combined mechanical analysis, Atterberg limits, permeability, compaction, unconfined compression, consolidation, triaxial, direct shear, and C.B.R. tests; field tests to consist of field density tests, soil borings, and load tests.

Laboratory: two hours.

10-403. *Reinforced Concrete Design* Three Credit Hours

Prerequisites: 10-303, 10-308, 10-312, and 30-232.

Required of all civil engineering seniors.

Theory and design of reinforced concrete structures, including the ultimate theory as applied to beams and columns. Design of footings combined stress members; design of selected portions of concrete structures with special attention to current specifications for design and construction. Attention is given to computer programs available to facilitate design.

Lecture: three hours.

10-405. *Structural Analysis II* Three Credit Hours

Prerequisites: 10-303, 10-308, 10-312, and 30-232.

Required of all civil engineering seniors.

Theory of statically indeterminate structures, using method of work, three-moment theorem, slope deflection, moment distribution; analysis of steel frame buildings; model analysis using Beggs Deformeter-Matrix Methods.

Lecture: two hours; laboratory: two hours.

10-406. *Steel Design* Three Credit Hours

Prerequisite: 10-405.

Required of all civil engineering seniors.

Theory and design of steel structures, including elastic and plastic design concepts. Design of tension and compression members; beams; beam columns; welded plate girders; trusses; mill buildings-composite design. Computer solutions are utilized for design shears, moments, and axial loads.

Lecture: two hours; laboratory: two hours.

10-407. *Fluid Mechanics* Four Credit Hours

Prerequisites: 10-301, 10-312, and 30-232.

Required of all civil engineering seniors.

Fluid characteristics, properties, and definitions; fluid statics; fluid dynamics; fluid flow and measurements, and application in meters, orifices, weirs, pipes, and open channels; laboratory period for experimental application of theory and for supervised computation work to include computer applications.

Lecture: three hours; laboratory: two hours.

10-408. *Environmental Engineering* Four Credit Hours

Prerequisite: 10-407.

Required of all civil engineering seniors.

Relationship of water supply and waste water treatment to public health; hydrology; water consumpton; water quality standards; collection, methods of treatment, and disposal of sewage; introduction to the problems of air pollution control and solid waste disposal; laboratory periods for accomplishment of standard tests in the examination of water and waste water, for accomplishment of a design problem, and for field trips. Classroom work includes use of computers in solving typical problems.

Lecture: three hours; laboratory: two hours.

10-409 and 10-410. *Soil Mechanics and Foundations* Three Credit Hours Each Semester

Prerequisites: 45-303 (Geology for Engineers), 10-306, 10-312, 30-232, 10-303, and 10-402 to be taken concurrently with 10-410. 10-407 to be taken concurrently with or preceding 10-409.

Required of all civil engineering seniors.

Soil physics; nomenclature and field identification; grain shape and soil structure; classification systems; soil capillarity; Atterberg limits; permeability; seepage; flow nets; piping; subsurface drainage; frost action; permafrost; stresses in soils; consolidation; shear strength; stability of slopes; earth dams; bearing capacity; shallow foundations; pile foundations; earth pressure; retaining walls and open cuts; underpinning; caissons and cofferdams; subsurface exploration; soil stabilization.

Lecture: three hours.

10-412. *Prestressed Concrete Design* Three Credit Hours

Prerequisites: 10-403.

Required of all civil engineering seniors.

Theory and design of prestressed concrete structures. Prestressing systems; end anchorages; loss of prestress; analysis and design of sections for flexure; shear; bond; bearing; compression members; piles.

Lecture: three hours.

10-420. *Senior Research Project* Two Credit Hours

Required of all civil engineering seniors as a prerequisite to graduation.

Civil Engineering Electives

The following courses are offered on demand. They constitute part of a list of courses (including courses offered by other departments) which are approved by the head of the Department of Civil Engineering as satisfying the requirement that each civil engineering major complete a three-credit-hour technical elective.

10-411. *Engineering Management* Three Credit Hours

Prerequisite: completion of all freshman, sophomore, and junior courses required for civil engineering majors, or approval of department head.

Technique of engineering planning and management using the critical path method. Both computer and noncomputer approaches are used. Relationships between owners, A-E's, and contractors are covered with emphasis on proper ethics and professional conduct by the engineer.

Lecture: three hours.

10-413. *Civil Engineering Case Study* Three Credit Hours

Prerequisite: completion of all freshman, sophomore, and junior courses required for civil engineering majors, or approval of department head.

Case study of a major engineering work, utilizing both lecture and seminar techniques of presentation. Priority is given to study of logical engineering works to increase the availability of persons responsible for conceiving, justifying, planning, funding, designing, and constructing the project for participation as guest lecturers and seminar leaders. Student participation is on the basis of presentation of reports on assigned features of the case study at seminars and contributions to a report on the case study.

Lecture: three hours.

10-417. *Environmental Aspects of Structural Design* Three Credit Hours

Prerequisite: completion of all freshman, sophomore, and junior courses required for civil engineering majors, or approval of department head.

Application of thermodynamic and heat transfer principles in the heating and cooling of structures. Topics covered include elementary thermodynamic processes; perfect gas relationships; psychrometrics; heat transfer in construction materials; solar radiation; heating and air conditioning calculations.

Lecture: three hours.

Department of Education

Professors: Hirshey, Magoulas, T. Mahan
Associate Professors: Rhett, A. Mahan, Clees, Templeton
Assistant Professors: Shelton, Yarnell, Waid, Usova, O'Bryant-Seabrook, Louwers, Crowley, Cobb

The Department of Education is dedicated to teaching and public service basically, while research is a developing function. It offers a major in secondary education. In addition, it provides courses in fine arts for students. The department offers the bachelor's and graduate degrees. Students are admitted to study in education after proving that they possess the potential for personal and academic success. Criteria utilized in the process of admitting students to major study include past academic achievement, results of national tests, interviews, and locally administered tests of several types. Specific admissions criteria are outlined below.

A. Incoming fourth class students will be admitted automatically but will be requested to complete data forms and have interviews with the admissions committee subsequent to arrival on campus.

B. Transfer from another major. All transfer students must meet standards in the following areas: personal qualities, communication skills, extracurricular activities, and scholarship.
   1. Each applicant must complete a written form and have a transcript attached to it.
   2. Each applicant must appear before the admissions committee and demonstrate or present evidence in regard to personal qualities, communication skills, and extracurricular activities.
   3. Scholarship will be determined from the transcript with the following criteria:
      a. Fourthclassmen: eligible for admission so long as they are eligible "for continuance."

b. Thirdclassmen and secondclassmen: eligible for regular admission if QPR is 2.0 or higher; eligible for probationary admission if free from academic probation.

c. Firstclassmen: not ordinarily admitted in transfer unless previous academic program has been such that graduation can be assured within an additional two semesters beyond the basic eight. In any case where that condition is met, a candidate must present a QPR no less than 1.80.

d. Exceptions to these standards may be made if extenuating circumstances justify them by the Committee on Admission, Retention, and Certification.

Admission to Directed Teaching (50-400) will be contingent upon the following criteria:

1. All education courses must be completed prior to or along with Directed Teaching. A grade-point ratio of 2.5 must have been maintained in education courses.
2. A grade-point ratio of 2.0 must have been maintained in the student's teaching field and a minimum of 20 hours in the field completed prior to taking Directed Teaching.
3. An overall grade-point ratio of 1.8 must be attained for admission to Directed Teaching.
4. All freshman and sophomore required courses must be completed prior to student teaching.

Following are objectives which guide the planning and practices of the department faculty:

1. To counsel and encourage qualified students to enter the profession of education.
2. To develop scholarship and mastery of a body of knowledge in the selected teaching specialty or major field of emphasis.
3. To enable the student to become aware of the emotional needs which he brings to the classroom, his feelings about being in the role of teacher, and the value orientation which he expresses in his behavior as a teacher.
4. To enable him to develop skills in critical thinking, to make reasoned judgments about controversial issues, and to pursue a disciplined method of inquiry.
5. To develop in him an awareness of the emotional needs of pupils, differing reactions pupils will have to them, and the needs for differential responses to such pupils.
6. To enable the student to evaluate a variety of strategies for teach-

ing and learning, to experience these strategies, and to develop from among them a personal style which fits his own objectives.

7. To develop his awareness and understanding of the school in relation to the political and social system and to evaluate his objectives in the light of this relationship.
8. To create in him an awareness of the school as the transmitter of the dominant value of the society and the implications of this in regard to community expectation about the role of the teacher.

Following is a summary of the three areas in which courses will be studied as prescribed and which serve as a framework within which each student will develop a program of study consistent with his individual need as a future teacher:

Education Curriculum

Area A: Common Learnings	
English: 80-101, 80-102, 80-201, and 80-202	12 semester hours
Mathematics: 30-103 and 30-104	6 semester hours
Sciences: 47-103 and 47-104 plus 8 hours in the physical sciences	16 semester hours
History: 70-101 and 70-102 plus 6 hours in social studies other than history	12 semester hours
Fine Arts: 54-205 and 54-206	6 semester hours
Psychology: 51-201	3 semester hours
Health: 58-101	3 semester hours
Physical Education: RPE four semesters	0 semester hours
Total Semester Hours:	58 semester hours
ROTC	16 semester hours
Area B: Professional Education	
Education: 50-201, 50-301, 50-302, 50-308, 50-400, 50-401, 50-408, and 50-422	27 semester hours
Area C: Major Teaching Field — Last Five Semesters	

The requirements in each of the major teaching fields offered at The Citadel are as follows:

1. English

Teaching Reading in the Secondary School (50-408)	3 semester hours
Composition and Literature (80-101)	3 semester hours
Composition and Literature (80-102)	3 semester hours

Major British Writers (80-201)	3 semester hours
Major British Writers (80-202)	3 semester hours
Introduction to Public Speaking (80-205)	3 semester hours
American Literature to 1900 (80-327)	3 semester hours
American Literature to 1900 (80-328)	3 semester hours
Principles of Literary Criticism in English (80-407)	3 semester hours
Effective Writing (80-413)	3 semester hours
Modern English Grammar (80-414)	3 semester hours
Adolescent Literature (80-425)	3 semester hours
Total	36 semester hours

2. Foreign Language

   30 semester hours in *one* language or 24 in one and 6 in a second language.

3. History

A Survey of American History (70-101 and 70-102)	6 semester hours
History of Western Civilization (70-203 and 70-204)	6 semester hours
The New South (70-312)	3 semester hours
Afro-American History (70-324)	3 semester hours
Latin American History (70-403)	3 semester hours
History of Modern Russia (70-410)	3 semester hours
Approved history 3 hours and approved elective 3 hours	6 semester hours
Total	30 semester hours

4. Mathematics

Pre-Calculus Mathematics (30-103)	3 semester hours
Finite Mathematics (30-104)	3 semester hours
Introductory Calculus (30-201 and 30-202)	6 semester hours
Linear Algebra (30-240)	3 semester hours
Introductory Statistics (30-211)	3 semester hours
Modern Geometry (30-305)	3 semester hours
Modern Algebra (30-303)	3 semester hours
Introduction to Computing (36-205)	3 semester hours
History of Mathematics (30-412)	3 semester hours
Approved electives	6 semester hours
Total	36 semester hours

5. Sciences

Certification in comprehensive science requires 31 hours in specified science courses plus 12 additional hours in biology, chemistry, or physics. See your advisor for the course requirements.

a. Biology:

Certification in biology requires these courses: 103, 104, 406, and 15 hours from the following areas plus anthropology 201, chemistry 103-104 with lab, and physics 203-204.

Psychology:

Cell Biology (47-205)	
Human Physiology and Human Physiology Laboratory (47-304 and 47-306)	4 semester hours

Field Biology:

The Vascular Flora of South Carolina (47-314)	4 semester hours
General Entomology (47-321)	3 semester hours
Ornithology (47-408)	4 semester hours
Marine Biology (47-409)	4 semester hours
Vertebrate Natural History (47-410)	4 semester hours

Developmental Biology:

Evolution (47-208)	3 semester hours
Genetics (47-308)	3 semester hours

Descriptive Biology:

Invertebrate Zoology (47-301)	4 semester hours
Human Anatomy and Human Anatomy Laboratory (47-303 and 47-305)	4 semester hours
Microbiology (47-310)	4 semester hours
Plant Morphology (47-315)	4 semester hours
General Parasitology (47-405)	3 semester hours

b. Chemistry — Required

Introduction to Botany (47-103)	4 semester hours
Introduction to Zoology (47-104)	4 semester hours
General Chemistry and General Chemistry Laboratory (40-101 and 40-111)	4 semester hours
General Chemistry and General Chemistry Laboratory (40-102 and 40-112) (Prerequisites: 40-101 and 40-111)	4 semester hours

Organic Chemistry and Organic Chemistry Laboratory (40-207 and 40-217) (Prerequisites: 40-101, 40-111, 40-102, and 40-112)	4 semester hours
Organic Chemistry and Organic Chemistry Laboratory (40-208 and 40-218) (Prerequisites: 40-207 and 40-217)	4 semester hours
Quantitative Analysis (40-300) (Prerequisites: 40-102, 40-112, 30-103, and 30-104)	4 semester hours

Three hours of electives:

Survey of Physical Chemistry (40-301) (Prerequisites: 40-102, 40-112, 30-103, and 30-104)	3 semester hours
Biochemistry (40-409) (Prerequisites: 40-207, 40-208, 40-217, and 40-218)	3 semester hours

The above with the optional course in Biochemistry will give the student 20 semester hours of chemistry and will cover the four main divisions of that science.

c. Physics

The teaching major in physics requires these courses: 101, 110, 201, 202, 211, 212, and 307 plus 8 hours chemistry and mathematics 131-132.

d. General Science—32 semester hours of which 8 hours will be in each biology, chemistry, geology, and physics.

Introduction to Chemistry and Introduction to Chemistry Laboratory (40-103, 40-113, and 40-104, 40-114)	8 semester hours
Introduction to Botany and Introduction to Zoology (47-103 and 47-104)	8 semester hours
General College Physics (26-110, 26-211, and 26-212)	8 semester hours
Introduction to Earth Science I and II (45-201 and 45-202)	8 semester hours
Total	32 semester hours

6. Social Studies

A Survey of American History (70-101 and 70-102)	6 semester hours
History of Western Civilization (70-203 and 70-204)	6 semester hours
Economic Origins and Principles (5-201)	3 semester hours
American National Government (60-201)	3 semester hours
Social Psychology (51-305)	3 semester hours
Introduction to Sociology (61-201)	3 semester hours
Elementary Geography (71-309)	3 semester hours
Two elective courses totaling 6 hours to be selected from anthropology, geography, government, economics, psychology, and history	6 semester hours
Total	33 semester hours

Political Science:

A teaching major in political science requires government 201, 202, 303, 304, 405, 407 and an elective plus economics 201, sociology 201, and history 203-204.

Curriculum

50-201. *Introduction to Education* Three Credit Hours

An orientation to teaching as a profession and to the teacher-training program. Study and discussions on school organization and teachers' roles and responsibilities; personal and professional guidance. Students will work an average of two hours weekly in the public school. Limited to students who are education majors.

50-301. *Philosophy of Education* Three Credit Hours

An orientation course; a survey of the history, philosophies, and theories underlying organized education; the significance of the dissemination of knowledge in a democracy.

50-302. *Educational Psychology* Three Credit Hours

The application of psychological principles to the teaching-learning process including its correlation with problems of individual differences, maturation, psychological adjustment, and evaluation and measurement. Each student will spend two hours weekly in a public school to gain experiences in a clinical setting.

50-303. *Guidance* Three Credit Hours

An experiential study of the scope of contemporary guidance programs and concepts of career development. Special emphasis will be placed on having students choose and carry out a personal behavior change project and a vocational self-assessment.

50-307. *Child Development* Three Credit Hours

Acquisition of understanding and appreciation of the mental, physical, social, and emotional aspects of development in childhood. Emphasis on techniques of motivation, principles of learning, learning styles, individual differences, and developmental problems.

50-308. *Adolescent Development* Three Credit Hours

Acquisition of understanding and appreciation of the mental, physical, social, and emotional aspects of development from puberty to early adulthood. Emphasis on the impact of environmental and biological factors on the physical, cognitive, and personality development of the adolescent and the implications resulting from this for educational procedures.

50-309. *The Contemporary American Family* Three Credit Hours

A frank and comprehensive analysis of the problems confronting the modern American family, with case studies treating the various phases of conflict with the family.

This course formerly was numbered 61-301.

50-312. *The Middle School: Curriculum and Organization* Three Credit Hours

Prerequisites: 50-201, 50-301, and 50-302.

The organization and philosophical basis for the middle school with emphasis on the developmental and psychological principles in curriculum development and classroom management.

50-400. *Directed Teaching* Six Credit Hours

Prerequisites: 50-201, 50-301, 50-305, 50-401.

A requirement for certification; observation and teaching in approved schools under approved supervising teachers: supervision by college instructor. Assignment only in major teaching field. This internship covers eight weeks, from 8:00 to 3:30 daily, in the final semester. Each student provides his own transportation. Must make formal application for Directed Teaching not later than six weeks prior to the beginning o the semester.

50-401. *Methods and Materials of* Secondary-School Teaching — Three Credit Hour

Study of the aims, methods, and materials employed in secondary school teaching; organization of subject matter; motivation and direction of learning; development of attitudes, appreciations, and ideals; classroom presentation of formal materials. The utilization of audio-visua hardware and software and the development and use of evaluative instruments in the total teaching-learning process will be emphasized

50-402. *Special Methods in Teaching* — Three Credit Hour

Special techniques, theories, and materials in teaching in the area o specialization in secondary education, grades 6-12. A. English; B Biology; C. Physical Science; D. Social Studies; E. Mathematics.

50-405. *Methods and Materials in the Elementary School* — Three Credit Hours

Study of the elementary program with emphasis upon materials curriculum, and skills needed for teaching mathematics; social studies science; health, music, and physical education; and language arts other than reading. Opportunity to develop varied types of teaching plans.

50-408. *Teaching Reading in the Secondary School* — Three Credit Hours

Designed to acquaint middle-school and high-school teachers with reading practices geared to their students. The course will include a broad survey of the field of reading with attention given to some diagnostic procedures as well as the development of general reading programs for the middle school and senior high school levels. Different subject areas will be considered.

50-416. *The Teacher as Manager* — Three Credit Hours

A course to better prepare educators for the added responsibilities demanded of them by the movement to measurable improvement in their management of learning. Educators will know and accept the new demands and will develop management abilities that will enable them to deal effectively with these added responsibilities. Offered via television.

0-418. *Methods and Materials of Middle School Teaching* Three Credit Hours

Prerequisite: 50-312.

Study of objectives, methods, and materials appropriate to the middle chool; organization of subject matter; motivation and direction of earning; development of attitudes, appreciations, and ideals; and class-oom utilization of materials.

50-419. *Special Methods in Teaching (Middle School)* Three Credit Hours

Special techniques, theories, and materials in teaching in the area of pecialization in middle schools. A. Language Arts; B. Mathematics; C. Science; D. Social Studies.

50-422. *The School in a Multi-Cultural Society* Three Credit Hours

This course provides an in-depth analysis of different family patterns, ocial mores, cultural values, and behavioral tendencies as they relate to cultural sub-groups. These factors are explored in relation to the school and field experiences are provided.

50-417. *The Nature of Mental Retardation* Three Credit Hours

A comprehensive study of the nature and causes of mental retardation. Specific areas include the concept of learning; causes and prevention of mental deficiency; and educational characteristics of the mentally retarded. Emphasis will be on developing an understanding of the potential of the retarded in the learning environment. Research in the field will be reviewed.

50-474. *Diagnostic-Prescriptive Teaching* Three Credit Hours

Admission by permission of instructor.

This course is designed to acquaint the student with the rationale, purpose, model, and theory of diagnostic-prescriptive teaching. Administrative considerations and problems relevant to implementation will be included.

Related Fields

In addition to the electives listed below, most of the Department of Education courses may be elected by qualified students in other departments.

Fine Arts

54-205. *Music Appreciation* Three Credit Hou

A non-technical course to enhance the student's understanding a enjoyment of music by a twofold approach: first, to gain fundament knowledge of style, content, and form of the more outstanding works the great composers; and, second, to study the evolution of musical art to the present time; particular emphasis placed upon the latter.

54-206. *Art Appreciation* Three Credit Hou

The theory of abstract principles and material techniques as applie in the evaluation of works of art. The employment of such theory in introductory study of famous art works.

54-207. *Drawing* Three Credit Hou

Prerequisite: 54-206.

An introduction to drawing in which fundamentals are taught. Objective and subjective approaches to creative compositions utilizin varied media will be stressed. Three 2-hour classes weekly.

54-208. *Color and Design* Three Credit Hou

Prerequisite: 54-206.

The fundamentals of color and design in theory and practice will b stressed. Project-oriented course in relationship to daily living. Thre 2-hour classes weekly.

54-209. *Music Theory I* Three Credit Hour

Prerequisite: consent of instructor based on music literacy.

Study of basic musical materials; the structure and use of all diatoni chords; sight-singing and ear training.

54-210. *Music Theory II* Three Credit Hour

Prerequisite: 54-209.

Continuation of Music Theory I. Inversions of diatonic chords; th dominant seventh chord and its inversions; nonharmonic tones; introduction to modulation; sight-singing and ear training.

54-301. *Ancient, Medieval, and Renaissance Art* Three Credit Hours

A survey of art from the prehistoric period through Sumerian, Egypian, Aegean, Greek, Roman, Byzantine, Romanesque, and Gothic art, ulminating in the Renaissance.

54-302. *Modern Art* Three Credit Hours
A study of art styles beginning with a review of the Renaissance and continuing through Mannerism, Baroque, and Rococo art, with emphasis on the nineteenth and twentieth century schools.

Library Science

Courses in library sicence are under the Education Department. They are intended to provide training for students wishing to qualify as teacher-librarians under the South Carolina Department of Education or to take undergraduate courses needed for admission to graduate programs of library sciences.

55-301. *Libraries and Library Science* Three Credit Hours
Designed to introduce the student to the field of library science and its requirements, to determine his aptitude for library work, and to define the purpose and function of libraries in general. Emphasis is upon the training and responsibilities of the librarian in the educational process. This is the basic introductory library-administration course which acquaints the student with those facets of library administration which all libraries have in common.

55-302. *Administration of the School Library* Three Credit Hours
The administration, organization, planning, and equipment of school libraries and teaching materials with emphasis upon budgeting, ordering, maintenance of the book collection, and circulation procedures within a school library.

55-303. *Reference Sources* Three Credit Hours
An introduction to the 115 basic reference sources most used in college, university, public, and school libraries. This includes dictionaries encyclopedias, indexes, yearbooks, and government documents which are studied and evaluated for their use in each type of library. Emphasis is on the theory and practical experience in reference work.

55-304. *Cataloging and Classification* Three Credit Hours
Basic principles of cataloging and classification combined with practical experience in processing the various types of books and materials. Problems peculiar to teacher-librarian will be emphasized.

55-305. *Children's Literature* Three Credit Hour

History of children's books; their selection and evaluation, includin modern books emphasizing winners of the Coldecott and Newbur Awards. Includes wide reading of all classes of children's literature an details which make children's books worthwhile. The course will b supplemented by discussions, reports, and special projects.

55-307. *Non-Book Materials* Three Credit Hour

Designed to solve the problems for librarians faced with the greate emphasis being placed on non-printed rather than printed materials Methods of acquiring, evaluating, cataloging, and classifying this material. This includes filmstrips, slides, filmloops, phonograph records transparencies, and other non-print materials as well as periodicals an pamphlets.

55-425. *Adolescent Literature* Three Credit Hour

Open to juniors and seniors and designed for the secondary-schoo teacher.

A study of literature for the adolescent, including materials of introducing the major literary genres to the secondary-school student.

Department of Electrical Engineering

Professors: Herring, Scoggin
Associate Professor: Askins
Assistant Professor: Dornetto

In 1941 the Board of Visitors authorized the establishment of a Department of Electrical Engineering at The Citadel. The department was founded to meet the needs of many students who are attracted to the type of education which The Citadel offers, but who were formerly compelled to go elsewhere to obtain training in the field of their special interest.

It is the purpose of the department to prepare men for professional work or for graduate study in the field of electrical engineering and to give training in as many of the elements of a broad education as can be included in a program of professional study leading to the degree of Bachelor of Science in Electrical Engineering.

The electrical engineering program is accredited by the Engineers' Council for Professional Development.

The first graduating class of eight men received degrees in September 1948. Since then, more than 650 degrees in electrical engineering have been earned at The Citadel, and facilities and curriculum have been steadily improved.

A student branch of the Institute of Electrical and Electronics Engineers was established in 1962 and is active at The Citadel; *Southern Corona,* the monthly newsletter of electrical engineers in South Carolina, is published within the department. Student Chapter Number One of the American Society of Naval Engineers, established at The Citadel in 1970, is closely associated with the department. In 1974 the department was admitted to membership in the National Conference of Standards Laboratories.

Convinced of the great value of practical experience, the department encourages and assists its majors to obtain gainful employment for at least one summer in electrical engineering or a related field.

Early in the junior year, the electrical engineering major will normally select an area of emphasis—such as electronics, power, automatic controls, etc.—and will choose his electives, in consultation with his faculty adviser, to achieve his objectives.

For a tabulation of the course requirements for electrical engineering majors, see "Courses of Study," pages 112 and 113. With the approval of the department head, up to 6 credit hours of professional electives may be elected from courses numbered above 300 in the Departments of Chemistry, Civil Engineering, Mathematics, or Physics.

20-101. *The Engineering Profession* One Credit Hour

Required of electrical engineering freshmen.

The role of the engineer in our society. Branches and functions of engineering; technical decisions and human welfare; professional ethics and registration; the energy outlook; the availability of materials and resources; ecology factors; and creativity. Guidance and counseling in effective study methods.

Lecture: one hour.

20-105. *Graphic Communication* One Credit Hour

Required of electrical engineering freshmen.

Orthographic and pictorial representation, without drawing instruments, of three-dimensional objects. Lettering, dimensioning, sectional and auxiliary views, and oblique and isometric sketches.

Laboratory: two hours.

20-106. *Engineering Analysis* One Credit Hour

Required of electrical engineering freshmen.

An introduction to problem solving. Graphical and numerical methods, applications of calculators, computer programming, and use of digital computers.

Lecture: one hour; laboratory: one hour.

20-201 and 20-202. *Introduction to Electrical Engineering* Three Credit Hours Each Semester

Prerequisites for 20-201: to be preceded or accompanied by 26-110 and 30-131.

Prerequisite for 20-202: 20-201.

Required of electrical engineering sophomores.

Basic electrical elements and sources: Ohm's and Kirchhoff's Laws; techniques of DC circuit analysis; sinusoidal analysis and phasors; power and three-phase circuits; and transient response of simple circuits.

Lecture: three hours, two semesters.

20-301 and 20-302. *Electrical Laboratory* One Credit Hour Each Semester

Required of electrical engineering juniors.

A two-semester sequence of laboratory work which is coordinated with the lecture courses in the junior year.

Laboratory: two hours.

20-304. *Nuclear Engineering* Three Credit Hours

Prerequisite: 26-212.

An introduction to the theory and application of nuclear energy. Topics include fission and the chain reaction; nuclear fuels; nuclear reactor principles, concepts, examples, construction, operation, and ecological impact; heat transfer and fluid flow; radiation hazards and shielding; nuclear propulsion; and controlled fusion.

20-308. *Elements of Electrical Engineering* Three Credit Hours

Prerequisite: 30-231.

Required of civil engineering juniors.

Electric and magnetic circuits and fields; electrical machinery; measurements and instrumentation; and basic electronics.

Lecture: two hours; problem solving or demonstration: two hours.

20-309. *Linear Circuit Analysis* Three Credit Hours

Prerequisites: 20-202, 26-212, and 30-234.

Required of electrical engineering juniors.

Solution of network equations; network theorems; Fourier series; and transient and unbalanced polyphase circuits.

Lecture: three hours.

20-310. *Energy Conversion* Five Credit Hours

Prerequisite: 20-309.

Required of electrical engineering juniors.

A study of the principles and characteristics of static and dynamic energy conversion devices.

Lecture: five hours.

20-314. *Electrical Properties of Materials* Three Credit Hours

Prerequisites: 20-202, 26-212, and 30-234.

Required of electrical engineering juniors.

A study of the electrical properties of conductors, semiconductors, and insulators; and magnetic and optical properties of electrical engineering materials.

Lecture: three hours.

20-324. *Technology and Society* Three Credit Hours

Open to juniors and seniors in all majors.

An exploration of the impact of 20th century technology on society, of the nature of the technology/society interfaces, and of the problems encountered in predicting societal response to technological developments. Also included is an examination of the influence of private and public policies in shaping technology and, through it, society; and a demonstration of the need for joint action by technologists and humanists.

Lecture: three hours.

20-401. *Electronics I* Three Credit Hours

Prerequisite: 20-314.

Characteristics of solid-state devices; theory and design of low-frequency amplifiers; transistor biasing and stabilization; design of multistage and feedback amplifiers; and digital circuitry.

Lecture: three hours.

20-402. *Electronics II* Three Credit Hours

Prerequisite: 20-401.

Transistors at high frequencies; oscillators and tuned amplifiers; analysis and design of large-signal circuits; and characteristics and applications of modern integrated circuits (e.g. operational amplifiers, timers, function generators, phase-locked loops, etc.).

Lecture: three hours.

20-405. *Electrical Measurements* Three Credit Hours

Prerequisite: 20-302.

Precision methods of measuring electromotive force, resistance, current, inductance, capacitance, and dissipation factor; analysis of instrumentation circuits; design of experiments; analysis of experimental data; and principles of Quality Assurance, with emphasis on inspection by attributes.

Lecture: two hours; laboratory: two hours.

20-408. *Electric Power Systems* Three Credit Hours

Prerequisite: 20-310.

A study of electric power generation, transmission, and distribution circuits. System economics. Study of load flow, faults, and system stability.

Lecture: three hours.

20-409. *Seminar* One Credit Hour

Required of electrical engineering seniors.

A study of current literature in electrical engineering and related fields. A library research paper is required as a part of the course work.

20-411. *Electrical Laboratory* One Credit Hour

Required of electrical engineering seniors.

Laboratory exercises which are coordinated with the lecture courses in the senior year.

Laboratory: two hours.

20-412. *Electrical Design Workshop* One Credit Hour

Required of electrical engineering seniors.

A project-oriented workshop/laboratory in which students develop and implement solutions to practical design problems.

Laboratory: two hours.

20-417 and 20-418. *Electromagnetic Theory* Three Credit Hours Each Semester

Prerequisite for 20-417: 20-310.
Prerequisite for 20-418: 20-417.
Required of electrical engineering seniors.

Vector calculus; electrostatic and magnetostatic fields; Maxwell's equations; boundary conditions; and wave propagation and radiation.

Lecture: three hours, two semesters.

20-419. *System Simulation* Three Credit Hours

Prerequisite: 30-232.

A study of simulation methods for physical systems using analog and digital computers.

Lecture: three hours.

20-420. *Senior Research Project* Three Credit Hours

Prerequisite: approval of department head.

A research project and formal report. Recommended for students planning graduate work. Approval for enrollment based on capability of applicant and acceptance of a written proposal.

20-423. *Communications Engineering* Three Credit Hours
Prerequisite: 20-309.
Principles of amplitude, frequency, and pulse modulation. Signal flow and processing in communications systems (e.g. radio, telephone, television, radar). Digital data systems.
Lecture: three hours.

20-425. *Systems I* Three Credit Hours
Prerequisite: 20-309.
Mathematical models of linear systems; time-domain analysis; representation of signals; Fourier series; Fourier transforms; LaPlace transforms; frequency-domain analysis; and state-variable formulation.
Lecture: three hours.

20-426. *Systems II* Three Credit Hours
Prerequisite: 20-425.
Feedback systems; Root-locus Methods; frequency response analysis; Nyquist and Bode plots; discrete-time systems; and Z-transforms.
Lecture: three hours.

20-427. *Digital Systems Fundamentals* Three Credit Hours
Boolean algebra; digital information coding; basic logic circuitry; design of combinational and sequential circuitry; and memory devices.
Lecture: three hours.

20-428. *Digital Systems Design* Three Credit Hours
Prerequisite: 20-427.
Structure of digital systems; input-output considerations; timing and control methods; and microprocessors.
Lecture: three hours.

Department of English

Professors: Blair, Brennan, Redd
Associate Professors: Alexander, Carpenter, Holbein, Mathis, Rembert, Riley, Weile
Assistant Professors: Emery, Hansen, Harvey, Leon, Lichtenbert, MacLeod, O'Neil, Peurifoy, White

Courses in English composition and literature are required of all freshmen and sophomores, regardless of their major fields of study.

Advanced standing with credits is given entering cadets who complete the College Entrance Board Advanced Placement Test in English with a grade of three or better.

The English major is designed for the student seeking a broad education suitable for a career in law, business, the armed forces, teaching, dentistry, medicine, or theology. In addition to a strong background in literature, the department offers a generous selection of elective courses that allow either a truly broad liberal arts background or an opportunity to take a number of courses within a secondary field.

The program within the English Department provides both depth and flexibility. Course offerings range from Anglo-Saxon literature to twentieth century American literature. The creative student may take courses in writing poetry, the short story, and in journalism. A system of tutorials and seminars allows both small classes and independent study.

By being allowed to take as many as eight courses outside the department during his junior and senior years, the student has ample latitude to follow other interests. During his freshman and sophomore years, he may take a number of courses insuring a background in a modern language, the sciences, mathematics, and the social sciences.

In his freshman year the English major must elect one of the natural sciences: biology, chemistry, or physics. Also, he must elect a modern language and complete two years of study. The entering freshmen with two or more units in a modern language may complete the language requirement in one year by starting at the 200 level. During the sophomore year the English major is required to take 70-203 and 70-204 (History of Western Civilization) and two approved elective courses. He may elect such courses as 51-201 (General Psychology), 54-205 (Music Appreciation), 54-206 (Art Appreciation), 61-201 (Introduction to Sociology), 80-205 (Introduction to Public Speaking), or 81-201 (Introduction to Philosophy).

In English the student is required to take 80-213 and 80-214 (Survey of English Literature) and two of the following: 80-210 (General Semantics), 80-211 (Mythology), or 80-212 (The Bible as Literature). During the junior and senior years he must take a minimum of three courses from Group A, Literature Before 1800, of which one course must be 80-317 or 80-318 (Shakespeare) and a second course must be 80-301 (Chaucer) or 80-319 (Milton). He must take two courses in Group B, Literature After 1800, of which one course must be 80-327 or 80-328 (American Literature to 1900). In Group C, Criticism, Language, and Writing, he must take two courses but may not use more than one journalism course (80-417 or 80-418) or one course in the Survey of World Literature (80-405 or 80-406) to fulfill the requirement. The student shall pursue his special interests by selecting five more courses from the three groups. (Courses numbered in the 200 series, e.g. 80-205, 80-206, etc., cannot be used to fulfill this five-course elective requirement.)

Unless otherwise indicated in the course descriptions, all advanced English courses are open to students who have completed their sophomore English requirements (80-201 and 80-202 or 80-213 and 80-214) or who have the approval of the department head. Juniors and seniors who qualify and are not English majors may take the courses under the pass-fail grading system.

For a tabulation of the requirements for the English major, see pages 114 and 115.

The courses in philosophy, formerly in the curriculum of the Department of Education, are now attached to the English curriculum under code number 81.

80-101 and 80-102. *Composition and Literature* — Three Credit Hours Each Semester

Required of all freshmen.

The development of the basic skills of writing and reading and of literary evaluations through the study of literary types. 80-101 is a prerequisite for 80-102.

80-201 and 80-202. *Major British Writers* Three Credit Hours Each Semester

Prerequisites: 80-101 and 80-102.

Required of all sophomores other than English majors.

Study in depth of major writers in British literature from the medieval period to the present. 80-201: Beowulf, Chaucer, Shakespeare, Milton, Pope, and Swift. 80-202: Wordsworth, Keats, Tennyson, Browning, Hardy, Yeats, and Eliot. Several themes assigned on the literature studied.

80-205. *Introduction to Public Speaking* Three Credit Hours

Prerequisite: 80-101.

Open to freshmen who have completed 80-101 and all upperclassmen.

The general principles of speech composition and speech presentation; practice in expository speaking.

80-206. *Persuasive Speaking* Three Credit Hours

Prerequisite: 80-205.

Open to sophomores, juniors, and seniors.

Logic, rhetoric, and psychology of securing desired reactions from friendly, neutral, and hostile audiences; sources of speech material and planning the speech; and improvement of volume, diction, rate, and platform manners in extemporaneous and manuscript delivery of classroom speeches.

80-210. *General Semantics* Three Credit Hours

Open to sophomores, juniors, and seniors.

A psychological approach to the study of language as an abstracting process employing a system of verbal symbols for informative, directive, and affective purposes.

80-211. *Mythology* Three Credit Hours

Open to sophomores, juniors, and seniors.

A study of mythology with special emphasis on Greco-Roman and Northern European myths. A discussion of the leading theories concerning the origins, development, and significance of myths together with the allusive and allegorical use of myth in later literature and art.

80-212. *The Bible as Literature* Three Credit Hours

Open to sophomores, juniors, and seniors.

A study of selected portions of the Old and the New Testaments as literary masterpieces and cultural monuments, with some attention to the major systems of interpretation.

80-213 and 80-214. *Survey of English Literature* Three Credit Hours Each Semester

Prerequisites: satisfactory completion of 80-101 and 80-102 or their equivalent. Students who have received course credit for 80-201 and 80-202 cannot receive additional credit for 80-213 and 80-214.

Required of all English majors.

First semester: a study of English literature from its beginnings to the end of the eighteenth century. Second semester: a study of English literature from the end of the eighteenth century to the present. Both courses will include some consideration of historical backgrounds and literary movements.

GROUP A
Literature Before 1800

English majors must complete a minimum of 9 hours in this area: 3 in Shakespeare (80-317 or 80-318); 3 hours in Chaucer (80-301) or in Milton (80-319); and 3 hours in one other course of this group.

80-300. *Literature of Medieval England, exclusive of Chaucer* Three Credit Hours

Open to juniors and seniors.

A survey of the most important literature composed during the Middle English period, some in Middle English, some in translation.

80-301. *Chaucer* Three Credit Hours

Required of all English majors as alternate to Milton. Open as an elective to other juniors and seniors.

An introduction to Chaucer's language, art, and cultural mileau through readings in *The Canterbury Tales, Trolilus and Criseyde,* and some of the shorter poems.

80-304. *Old English Literature* Three Credit Hours

Open to juniors and seniors.

A study of representative works of different genres in translation and of selected works in the original language.

80-317 and 80-318. *Shakespeare* Three Credit Hours Each Semester

One semester required of all English majors. Open as an elective to other juniors and seniors.

A study of representative plays—comedies, histories, and tragedies—to give the student insight into the greatness of Shakespeare as dramatist and poet.

80-319. *Milton* Three Credit Hours

Required of all English majors as alternate to Chaucer. Open as an elective to other juniors and seniors.

A study of *Paradise Lost* entire, of *Samson Agonistes,* and of representative prose works, with special attention to the philosophical content.

80-320. *Non-dramatic Literature of Sixteenth Century England* Three Credit Hours

Open to juniors and seniors.

A study of the principal writers of the period (More, Wyatt and Surrey, Sidney, Elyot, and Spenser, among others), with particular emphasis on the prominent aspects of the Renaissance spirit.

80-321. *Seventeenth Century Poetry and Prose, exclusive of Milton* Three Credit Hours

Open to juniors and seniors.

A study of representative prose prior to the Restoration, of representative poetry of Ben Jonson and his "sons," and of John Donne and the metaphysical poets.

80-322. *Survey of English Drama to 1800* Three Credit Hours

Open to juniors and seniors.

A detailed study of representative plays (less Shakespeare's) from the medieval beginnings of English drama to the end of the Enlightenment.

80-323. *Neoclassicism, 1660-1744* Three Credit Hours

Open to juniors and seniors.

Dryden, Addison, Swift, and Pope, with some attention to the lesser writers of the period.

80-324. *The Age of Johnson, 1744-1798* Three Credit Hours

Open to juniors and seniors.

A study of the decline of Neoclassicism, the rise of prose, and the movement toward Romanticism. Major figures are Gray, Boswell, Johnson, Burns, and Blake.

GROUP B
Literature After 1800

English majors must complete a minimum of 6 hours in this area: hours in American Literature (80-327 or 80-328) and 3 hours in one othe course of this group,

80-325. *The Romantic Movement* Three Credit Hour

Open to juniors and seniors.

A study of the chief features which culminated in the Romantic writing of the early nineteenth century, with special emphasis on the five majo poets: Wordsworth, Coleridge, Byron, Shelley, and Keats.

80-326. *Victorian Poetry and Prose* Three Credit Hour

Open to juniors and seniors.

A study of the period from 1830 to 1900, showing the effects of th Industrial and Scientific Revolutions on traditional attitudes toward ar and life through the works of the major writers of the period, wit emphasis upon the poetry of Tennyson, Browning, and Swinburne an upon the prose of Carlyle, Arnold, Huxley, and Pater.

80-327 and 80-328. *American Literature to 1900* Three Credit Hour
Each Semeste

One semester required of all English majors. Open as an elective to othe juniors and seniors.

A study of some of the best writing done by Americans from the time o the first settlements down to the present: the first semester covering the literature of the colonial and revolutionary periods and such writers as Irving, Bryant, Hawthorne, Poe, Melville, Emerson, and Thoreau; the second semester covering such writers as Lincoln, Whitman, Emily Dickinson, Mark Twain, Howells, James, and Henry Adams.

80-329. *The Development of the English Novel to 1900* Three Credit Hours

Open to juniors and seniors.

Lectures on narrative forms which preceded the novel and on lives and works of major eighteenth and nineteenth century novelists; reading and discussion of selected novels.

80-331. *Modern Drama* Three Credit Hours

Open to juniors and seniors.

A study of representative plays to show the development of late nineteenth century English and twentieth century English and American drama under the influence of Ibsen, Strindberg, Pirandello, Maeterlinck, and other continental playwrights. Major figures include Shaw, O'Neill, Miller, and Williams.

80-332. *Modern Novel in English* Three Credit Hours

Open to juniors and seniors.

A course in the reading and critical analysis of selected English and American novels by Conrad, Lewis, Hemingway, Faulkner, Evelyn Waugh, Heller, Vonnegut, Brautigan, and Pynchon. A term paper on a novel other than those studied in class.

80-333. *Southern Literature to 1900* Three Credit Hours

Open to juniors and seniors.

A survey of the literary achievement of Southern writers from 1710 to 1900. Special emphasis on William Gilmore Simms, Paul Hamilton Hayne, Henry Timrod, Sidney Lanier, and the frontier humorists of the old Southwest: Johnson Jones Hooper, Augustus Baldwin Longstreet, Joseph Glover Baldwin, and George Washington Harris.

80-334. *Major Writers of the Southern Renaissance* Three Credit Hours

Open to juniors and seniors.

A study of the most important Southern authors of the twentieth century, from Ellen Glasgow to the present day, with emphasis on significant regional topics such as the Fugitive and Agrarian Movements, the Development of the Southern Tradition, and the Southern Gothic School.

80-335. *Contemporary British Literature* Three Credit Hours

A study of selected works by major British novelists and poets whose writings are representative of the ideas, literary techniques, and cultural patterns of England and Ireland from World War I to the present. Poets studied: Hardy, Hopkins, Housman, Graves, and Spender.

80-336. *Modern British and American Poetry* Three Credit Hours

Open to juniors and seniors.

Study of poetry of such poets as Yeats, Robinson, Frost, Eliot, and Auden; lectures planned to provide a foundation for future reading in these and other poets.

GROUP C
Criticism, Language, and Writing

English majors must complete 6 hours in this area.

80-405 and 80-406. *A Survey of World Literature* Three Credit Hours Each Semester

Open to juniors and seniors.

80-405: Masterpieces of world literature in translation from the *Rig Vida* to Dante with special attention to the philosophical content and the development of literary forms. (This course formerly was listed as Backgrounds of English Literature.)

80-406: Masterpieces of world literature in translation from Boccaccio to the present time with special attention to the philosophical content and the development of literary forms. (This course formerly was listed as Backgrounds of English Literature.)

80-407. *Principles of Literary Criticism* Three Credit Hours

Open to senior English majors and to any student who has completed four courses in English above the sophomore level, or approval of the department head.

A study of literary criticism from the classical tradition to the modern period.

This course formerly was numbered 80-407 and 80-408 and listed as Principles of Literary Criticism in English.

80-413. *Effective Writing* Three Credit Hours

Open to juniors and seniors.

The study and practice of advanced writing techniques for those who wish to improve their prose styles. This course fulfills state teacher certification requirements for advanced composition.

80-414. *Modern English Grammar* Three Credit Hours

Open to juniors and seniors and designed for the secondary-school teacher.

An analysis of the structure of Modern English, its phonology, morphology, and syntax, with explorations into the conceptual basis of language and the way in which grammar generates meaning.

80-415. *The English Language* Three Credit Hours

Open to sophomores with approval of department head, and to juniors and seniors.

A survey of the history of the English language beginning with the Indo-European backgrounds, tracing the development of Old, Middle, and Modern English through major phonological, morphological, and syntactic changes, with some attention to dialectical variations and semantic changes.

80-416. *The English Language* Three Credit Hours

80-415 is recommended as but not a prerequisite for 80-416.

Open to sophomores with approval of department head, and to juniors and seniors.

An intensive and an advanced study of vocabulary based upon etymological and inflectional characteristics—roots, combining forms, prefixes, and suffixes. A thorough development of vocabulary will be concomitant to this study.

80-417 and 80-418. *Journalism* Three Credit Hours
Each Semester

Prerequisites: 80-201, 80-202, or 80-213.

Open to sophomores with approval of department head, and to juniors and seniors.

First semester: newswriting and copy editing; second semester: newspaper and magazine design, layout, and production. Both semesters include numerous news and feature article writing exercises, workshops, and other aspects of journalism. Each semester is independent of the other and can be taken in any order.

80-421. *Senior Tutorial* Three Credit Hours

Prerequisite: approval of department head.

Open to senior English majors.

A tutorial course individually designed to meet the needs or special interests of one or a few students. Assignments, tutorial sessions, tests and papers will be assigned by the professor in consultation with individual students.

80-423 and 80-424. *Senior Seminar* Three Credit Hours
Each Semester

Open to senior English majors.

A seminar on the individual author, topic, or problem, as suggested by members of the faculty or by groups of English majors and subject to the approval of the department head in consultation with the instructor.

80-425. *Adolescent Literature* Three Credit Hours

Open to juniors and seniors and designed for the secondary-schoo teacher.

A study of literature for the adolescent, including methods of introducing the major literary genres to the secondary-school student.

80-426. *Creative Writing* Three Credit Hours

Open to juniors and seniors.

Analysis of imaginative literature and directed practice of creative writing.

Philosophy

81-201. *Introduction to Philosophy* Three Credit Hours

An inquiry into the nature of philosophic thinking with emphasis upon the problem of knowledge (epistemology) and the nature of reality (metaphysics). Topics considered include skepticism and truth, appearance and reality, the mind-body problem, empiricism vs. rationalism, and materialism vs. idealism.

81-202. *Reasoning and Critical Thinking (Logic)* Three Credit Hours

A study of the principles and methods which distinguish valid from invalid arguments. After a brief examination of what an argument is, the concepts of validity and invalidity are introduced, and a systematic study of the principles governing the application of these concepts to arguments is undertaken. An extensive treatment of traditional Aristotelian logic (the syllogism, rules of validity, immediate inference, etc.) is supplemented by an introduction to principles of modern symbolic logic.

81-301. *Ethics* Three Credit Hours

A study of the nature of morality and moral reasoning through critical analyses of the writings of classical and contemporary thinkers on this subject. Problems regarding the role of reason in human conduct will be examined in detail, with emphasis upon the notions of the good life, happiness, moral obligation and duty, right and wrong, and the nature of moral language.

1-302. *Philosophy of Religion* Three Credit Hours

Prerequisite: three semester hours of philosophy.

An analysis of what religion is, the role it plays in human life, and how it iffers from such other areas of life as ethics and science. The arguments or and against the existence of God are examined, as is the appeal to eligious experience (e.g. mysticism). Criticism of religion, e.g. that of Freud and Marx, is considered, as are the roles of faith and revelation and he questions of evil and immortality.

81-307. *Ancient Philosophy* Three Credit Hours

Prerequisite: three semester hours of philosophy.

A study of the foundations of Western thought: the pre-Socratic Greek hinkers; Socrates, Plato, Aristotle, and their schools with emphasis upon he major writings of Plato and Aristotle.

81-308. *Medieval Philosophy* Three Credit Hours

Prerequisite: three semester hours of philosophy.

A critical survey of neo-Platonism and subsequent scholastic philosophy, with emphasis upon the thought of Plotinus, St. Augustine, Erigena, St. Anselm, St. Bonaventure, St. Thomas Aquinas, and Scotus.

81-309. *Seventeenth and Eighteenth Century Philosophy* Three Credit Hours

Prerequisite: three semester hours of philosophy.

A study of the development and results of British empiricism and continental rationalism in the seventeenth and eighteenth centuries, culminating in the critical philosophy of Kant. The chief and most influential works of Locke, Berkeley, Hume, Descartes, Leibniz, and Spinoza will be read in an attempt to clarify and evaluate the problem of the conflict of reason and experience.

81-407. *Nineteenth Century Philosophy* Three Credit Hours

Prerequisite: three semester hours of philosophy.

Romanticism and evolution, reason and revolution: Hegel and the rise of social theory. A study of Hegel's enigmatic identification of the real and the rational, the dialectic, which articulates it, and its subsequent interpretation and criticism from Marx through Nietzsche. Students will be encouraged to read from and write on other thinkers of the period, including poets, historians, and scientists.

81-408. *Contemporary Philosophy* Three Credit Hours

Prerequisite: three semester hours of philosophy.

A study of the major philosophical movements and thinkers that shape our lives in the twentieth century. Existentalism, phenomenology, process philosophy, logical positivism, analytic philosophy, Sartre, Kierkegaard Camus, Marcel, Husserl, Heidegger, Wittgenstein, Ayer, Russell, Moore, Ryle, Austin, Whitehead.

81-409. *Seminar in Philosophical Topics* Three Credit Hours

Prerequisite: at least junior standing and consent of the instructor.

A study of selected topics from various fields of philosophy (e.g philosophy of history, philosophy of science, aesthetics, philosophy of law) with special emphasis upon their contemporary relevance and interdisciplinary character. Content in any given semester to be determined by student needs.

Department of History

Professors: Coussons, Martin, Addington
Associate Professors: Nichols, Harris, Brittain, Fraser, J. Moore, Tyler
Assistant Professors: White, Gordon, West, Tripp
Instructors: W. Moore, Barrett

The Department of History endeavors to give the student an acquaintance with and an appreciation of our heritage; to enable him to see causes and effects, contrasts and comparisons as shown in the development of civilization; to give him an accurate knowledge of the history of his own country and familiarize him with its institutions and the democratic ideals which have influenced American life; to acquaint the student who elects this subject with the standard works in its various fields and to prepare him to pursue graduate and professional studies.

A graduate with a major in history will, with his 24 hours of selected electives, be well qualified for the responsibilities of citizenship and also will have the broad background necessary for a successful career in business, law, the armed services, the church, and certain fields of science.

Students electing history as a major are required to take the following courses: 70-101 and 70-102 (A Survey of American History), 70-203 and 70-204 (History of Western Civilization), 70-301 and 70-302 (History of England), and a total of 21 semester hours of junior and senior history courses which must include 6 semester hours from each of the following groups:

Group A: 70-303, 70-304, 70-309, 70-313, 70-314, 70-319, 70-320, 70-405, and 70-406.

Group B: 70-305, 70-306, 70-307, 70-308, 70-310, 70-318, and 70-321.

Group C: 70-401, 70-402, 70-403, 70-404, 70-407, 70-408, 70-409, and 70-410.

They are also required to take two years of a modern language, 5-201 (Economic Origins and Principles) and 5-202 (Economic Principles and Problems), 60-201 (American National Government), 60-202 (State and Local Government), 71-309 (Elementary Geography), and 60-401 and 60-402 (Constitutional Law) or 60-405 and 60-406 (International Politics), or 60-407 and 60-408 (Political Theory). For further details see the tabulation of the curriculum for a history major on pages 116 and 117. Courses marked with an asterisk (*) are usually offered in alternate years or on demand.

70-101 and 70-102. *A Survey of American History* Three Credit Hours Each Semester

Required of all cadets in their freshman and/or sophomore year.

Survey of American history from the period of discovery to the present; a brief treatment of the colonial period, followed by a more detailed study of such subjects as the causes of the Revolution, the framing of the Constitution, the development of political parties, the sectional conflict, economic progress and problems, and foreign relations; special emphasis placed on understanding the nature of American democracy and the role of the United States in world affairs from 1789 to the present.

70-203 and 70-204 *History of Western Civilization* Three Credit Hours Each Semester

Required of sophomores majoring in English, history, modern languages, political science, and psychology.

A survey of the development of Western institutions, ideas, and cultures from the beginnings of civilization to the present day. Emphasis is given to the economic, social, and cultural forces as well as to purely political and military ones. First semester to 1660, second from 1660 to the present.

70-205. *History of Naval Warfare* Three Credit Hours

A survey of the history of naval welfare since ancient times, with emphasis on the historical development of naval strategy, tactics, organization, and influence on world affairs.

70-301 and 70-302. *History of England* Three Credit Hours Each Semester

Required of all history majors.

A survey of English history from earliest times to the present. Special attention is given the formation of the English people, the continuity of their social and political experience, and the English legacy to Americans. The institutional development of parliament, monarchy, legal system, and local government is constantly viewed against the changing background of society and economic activity.

70-303 and 70-304. *The United States Since 1900* Three Credit Hours Each Semester

American social, cultural, economic, and political development in the twentieth century; emphasis on the increasing importance of the United States in world affairs and significant political and economic changes.

70-305 and 70-306. *Europe in the Twentieth Century* Three Credit Hours Each Semester

A survey of the origins and impact of World War I on the major European states; their political, social, and economic development during the interwar period; the origins and course of World War II; and the Cold War.

*70-307. *History of Europe, 1815-1914* Three Credit Hours

A survey of Europe from Waterloo to Serajevo; political reaction and reform; the Industrial Revolution with its economic, social, and political effects; the effects of nineteenth century nationalism; the renewed interest in imperialism, other factors in international rivalries, and the coming of World War I.

*70-308. *Renaissance and Reformation* Three Credit Hours

The Renaissance as a European-wide movement, emanating from the Italian Peninsula; the religious, political, and social upheavals of the period 1500-1648.

*70-309. *Disunion and the War for Southern Independence* Three Credit Hours

The political, economic, diplomatic, and military history of the United States, 1850-1865, emphasizing the forces that tended to bind or disrupt the union and including a detailed account of the war.

*70-310. *The Era of the French Revolution and Napoleon* Three Credit Hours

A survey of the Old Regime and the causes of the Revolution, followed by an examination of the principal events of the period, stressing the innovations of the Revolutionary governments, the causes of Napoleon’s rise to power, his achievements in France and in Europe, and the reasons for his eventual downfall.

*70-311. *The Old South* Three Credit Hours

The political, social, and economic characteristics of the South before 1860 with emphasis on the role of this area in the national scene.

*70-312. *The New South* Three Credit Hours

The political, economic, and social development of the South since 1877; emphasis on contemporary regional problems and their impact on American life.

70-313 and 70-314. *Social and Intellectual History of the United States* Three Credit Hours Each Semester

Emphasis on the fashions, foods, manners, morals, mobility, and leisure time of Americans; the impact of Puritanism, slavery, nationalism, Darwinism, pragmatism, and Freud on religion, education, politics, business, law, and the arts.

70-315 and 70-316. *History of Modern Warfare* Three Credit Hours Each Semester

A survey of the development of modern warfare, emphasizing the impact of social, economic, political, and technological forces upon military theory and practice.

*70-317. *Economic History of the United States* Three Credit Hours

A survey of the American development from the colonial period to the present with respect to agriculture, business, industry, labor, and related governmental policies.

*70-318. *Economic History of Modern Europe* Three Credit Hours

A survey of the development of the European economy from the origins of the first Industrial Revolution to the Common Market; particular emphasis upon those areas where increasing industrialization forced governmental action, changed social structure, and created new systems of thought.

*70-319. *The Jeffersonian and Nationalist Period* Three Credit Hours

A study of American history, 1800-1850; establishment of Jeffersonian principles; Second War for American Independence, growth of nationalism; rise of the common man and its influence politically, socially, and economically; the development of sectionalism.

*70-320. *America Comes of Age, 1865-1900* Three Credit Hours
Reconstruction, the last frontier, the advent of big business with its effects, the origins of American imperialism.

*70-321. *Absolutism and the Age of Reason* Three Credit Hours
Europe, 1648-1789; the ascendancy of France, emergence of Prussia and Russia, colonial rivalries, dynastic struggles, enlightment and rationalism.

*70-323. *The History of Science and Technology* Three Credit Hours
An interpretative study of the development of science and technology in the Western World, with special emphasis on the scientific, industrial, and technological revolutions.

**70-324. Afro-American History, 1619 to present* Three Credit Hours
A topical survey of Afro-American history from colonial times to the present. Special emphasis given to slavery, antebellum free blacks, Reconstruction, the Jim Crow era, Civil Rights Movement, the Second Reconstruction, and "Black Power." Designed to explore the history of the American black community.

70-401 and 70-402. *History of American Diplomacy* Three Credit Hours Each Semester
The heritage, fundamental principles, and progressive development of American foreign policy from colonial times to the present with emphasis on the effects of domestic politics; the role of the United States as leader of the Western World.

70-403 and 70-404. *Latin American History* Three Credit Hours Each Semester
Survey of the economic, cultural, and political development of Latin America; study of the nations as a unit, with special attention to the individuality of each; concentration by each student in his collateral reading on some one country.

70-405. *History of Colonial America to 1763* Three Credit Hours
The motives of colonization; the evolution of self-government; the extension of the frontier; economic, social, and religious life; imperial rivalries.

70-406. *The American Revolution and the Establishment of the Union* Three Credit Hours

A study of American history, 1763-1800; the causes of the Revolution, War for American Independence, problems of Confederation, the establishment of the Union in the Federalist period.

70-407. *History of the Ancient World* Three Credit Hours

A survey of the earliest civilizations of man with emphasis on the history of Ancient Greece and Rome.

70-408. *The Middle Ages* Three Credit Hours

A survey of Europe from the demise of Rome to the coming of nationalism and the Renaissance.

70-409. *History of the Far East in Modern Times* Three Credit Hours

A study of the impact of Western imperialism on China, Japan, and Southeast Asia and East Asia's response in the nineteenth and twentieth centuries. Emphasis on the emergence of modern nationalism and communism in China, the development of militarism and ultranationalism in Japan, the Pacific war, and the demise of Western colonialism in Southeast Asia.

70-410. *History of Modern Russia* Three Credit Hours

History of the development of tsarst absolutism under the Romanov dynasty and of the religious, social, and economic institutions of the tsarist state. Intensive treatment of the 1917 Revolution and the institutional development of the Soviet state to world power status. Extensive reading in the historical, literary, and periodical works of Russian and Soviet culture.

*70-411. *South Carolina History* Three Credit Hours

A survey of the political, economic, social, and intellectual development of South Carolina from its discovery to the present, with emphasis on the relation of the state to the South and to the nation.

70-412. *Studies in Military Affairs Since the Eighteenth Century* Three Credit Hours

Prerequisite: 70-316 (History of Modern Warfare) or the equivalent.

Studies in depth of selected military history topics with emphasis on student reading, research, and group discussion.

70-420. *Senior Research Project* Three Credit Hours

Prerequisite: approval of department head and supervising professor.

An independent research project culminating in a formal paper. Registration in the first semester with periodic progress required. Preparation and presentation of the research paper in the second semester. Recommended for those students considering graduate or professional study.

Geography

71-309. *Elementary Geography* Three Credit Hours

Required of all history majors.

An introductory course dealing primarily with the elements and principles of geography. Familiarity with important global features and locations is stressed. Topics include: maps, oceans, atmosphere and winds, climate (elements and patterns), landforms, soils and agriculture, mineral resources, and industry.

*71-310. *Cultural Geography* Three Credit Hours

An application of geographic principles to human activities in selected regions of the world. Cultural patterns are contrasted and compared in the light of the physical environment.

*71-311. *Economic Geography* Three Credit Hours

The geographic foundations and distribution of economic activities in different parts of the world.

*71-312. *Historical Geography* Three Credit Hours

A survey of geographical influences in prehistory and history. Various theories of geographical determinism are evaluated against the backdrop of historical realities.

Department of Mathematics

Professor: Sutton
Associate Professors: Metts, Thompson, Brown, Crumley, McIntyre, Ingraham, Comer
Assistant Professors: Hull, Kirkland, Hill, Crabtree, Hathaway, Pages, Moore
Instructor: Denig

To meet the demands of a world in which mathematics is playing an increasingly important role, The Citadel requires of all students at least one year of mathematics. In the science and engineering majors two or more years of mathematics must be scheduled. Students pursuing non-science degrees who are well founded in algebra and trigonometry are encouraged to complete 30-201 and 30-202 (Introductory Calculus) to meet mathematics graduation requirements.

The department offers two courses of study: a B.S. in Mathematics for students who desire a thorough training in undergraduate mathematics and who may wish to pursue graduate work in this field; and a B.A. in Mathematics for students whose interests may be somewhat more diversified. A complete listing of these courses of study is found on pages 118-121.

B.S. Mathematics Major

There is today an ever-increasing demand for college graduates trained in mathematics, on the part of government and industrial laboratories as well as schools and colleges. The B.S. in Mathematics course of study includes 21 semester hours of general electives to be chosen from non-required mathematics courses numbered above 300 or from other fields, including computer science. The required courses are 6 semester hours of computer science, 36-205 and 36-301, and the following 48 semester hours of mathematics: 30-131, 30-132, 30-231, 30-232, 30-240, 30-303, 30-305, 30-

318, 30-321, 30-322, 30-401, 30-405, 30-411, 30-414, 30-422 (or 30-420). See pages 118 and 119 for complete program.

B.A. Mathematics Major

The flexibility of the courses of study leading to the B.A. degree in Mathematics should be most attractive to students wishing to pursue mathematical careers or graduate study in the areas of biology (medicine), business administration, computer science, political science (law), or a secondary mathematics teaching career. All of these fields are continually requiring greater emphasis on mathematics. The courses of study include a total of 48 semester hours in approved and general electives. The candidate must take 3 semester hours of Introduction to Computing and 32 semester hours of mathematics, namely 30-103, 30-104, 30-131, 30-132, 30-211, 30-232, 30-240, and 9 semester hours of mathematics electives. Sequences of approved electives must have the approval of the department head. See pages 120 and 121 for an outline of a general course of study. A booklet explaining the details of each of the five areas of study is available from the Department of Mathematics.

30-101 and 30-102. *Fundamental Mathematics* Three Credit Hours Each Semester

Offered on demand.

A modern treatment of the essential topics of college algebra and trigonometry including the elementary theory of sets, vectors, matrices, and probability.

30-103. *Pre-Calculus Mathematics* Three Credit Hours

Equations and inequalities, relations and functions, exponential and logarithmic functions, trigonometry, polynomials.

30-104. *Finite Mathematics* Three Credit Hours

Prerequisite: 30-103 or its equivalent, or approval of department head.

Logic, elementary matrix theory, systems of linear equations, permutations, combinations, binomial expansion, probability theory, linear programming, simplex method, applications in business, economics, and the social sciences.

30-119. *College Algebra and Trigonometry* Four Credit Hours

A modern treatment of the essential topics of college algebra and trigonometry. Offered only for students whose major requires calculu and whose background has been determined by the Mathematics Department to be inadequate. Any student who completes 30-119 an changes to a major which does not require calculus must complete a additional three semester hour course in mathematics (not includin 30-101, 30-102, or 30-103) to satisfy graduation requirements.

30-131 and 30-132. *Analytic Geometry and Calculus* Four Credit Hour Each Semeste

Prerequisite: 30-119 or a satisfactory score on the Mathematic Achievement Test, Level I or II (see page 19).

Required for B.S. degree in Chemistry, Engineering, Mathematics and Physics and for B.A. degree in Mathematics.

A unified treatment of the theory and applications of plane analytica geometry and the differential and integral calculus of functions of on variable.

30-201 and 30-202. *Introductory Calculus* Three Credit Hour Each Semeste

Prerequisite: 30-103 or its equivalent, or approval of departmen head.

A basic course in the calculus designed to provide a background for a understanding of the mathematics essential in the fields of modern social science and education. Fundamental ideas are emphasized so that some skill in the formation of new problems in the language of mathematics may be acquired.

30-211. *Introductory Statistics* Three Credit Hours

Prerequisites: 30-103 and 30-104, or the equivalent.

Required for B.A. degree in Mathematics; elective to others.

An elementary treatment of basic statistical concepts including: frequency distributions; measures of central tendency and dispersion; probability; distributions (normal, etc.); sampling theory; estimation; hypothesis testing. Special emphasis is given to applications in the fields of biology, business, education, political science, and the behavorial sciences.

30-231. *Intermediate Calculus* Four Credit Hours

Prerequisites: 30-131 and 30-132.

Required for B.S. degree in Chemistry, Engineering, Mathematics, and Physics.

The analytical geometry of three dimensions; the differential and ntegral calculus of functions of two or more variables.

30-232. *Differential Equations* Three Credit Hours

Prerequisite: 30-132, 30-202, or 30-231.

Required for B.S. degree in Chemistry, Engineering, Mathematics, and Physics and for B.A. degree in Mathematics.

Differential equations of the first order and degree; linear differential equations of higher order; miscellaneous differential equations; applications.

30-234. *Linear Algebra and Differential Equations* Four Credit Hours

Prerequisite: 30-132 or 30-231.

Required for B.S. degree in Electrical Engineering.

An integrated course in linear algebra and differential equations required for electrical engineering students. Topics are differential equations of the first order and degree, linear differential equations of higher order, vectors, vectors spaces, bases, linear transformations, systems of linear equations and algebra of matrices and determinants.

30-240. *Linear Algebra* Three Credit Hours

Prerequisite: 30-132 or 30-202.

Required of mathematics majors; elective to others.

Vector spaces; systems of linear equations; bases; subspaces; algebra of matrices; inverses; determinants; orthogonal transformations; quadratic forms.

30-301. *Mathematical Models and Applications* Three Credit Hours

Prerequisites: 30-103 and 30-104 or their equivalent.

Available as a general elective for all mathematics majors.

An introduction to the theory and practice of building and analyzing mathematical models for real world situations encountered in the social, biological, and environmental sciences.

30-303. *Modern Algebra* Three Credit Hours

Prerequisite: 30-132 or 30-202.

Required for B.S. degree in Mathematics.

Mathematical systems: groups, rings, integral domains, fields, vector spaces; advanced topics from linear algebra.

30-305. *Modern Geometry* Three Credit Hours

Prerequisite: 30-132 or 30-202.

Required for B.S. degree in Mathematics.

Special topics from axiomatic geometry; Euclidian geometry; projective geometry; non-Euclidean geometry; metric projective geometry.

30-318. *Numerical Analysis* Three Credit Hours

Prerequisites: 36-301 and 30-232, or approval of department head.

Required for B.S. degree in Mathematics.

Approximation theory; roots of algebraic and transcendental equations; iterative methods; numerical differentiation and integration; numerical solution of differential equations; mathematical methods for the computer.

30-321 and 30-322. *Advanced Calculus* Three Credit Hours Each Semester

Prerequisite: 30-232.

Required for B.S. degree in Electrical Engineering, Mathematics, and Physics.

Vector calculus; Bessel's functions; partial differential equations, Fourier series; LaPlace transforms; functions of a complex variable.

30-401. *Real Analysis* Three Credit Hours

Prerequisite: 30-303 or approval of department head.

Required for B.S. degree in Mathematics.

Dedekind cuts, completeness, perfect sets, Cantor set, Heine Borel theorem, sequences, series, continuity, differentiation.

30-405 and 30-406. *Probability and Statistics* Three Credit Hours Each Semester

Prerequisite: 30-132 or 30-202.

One semester (30-405) required for B.S. degree in Mathematics.

Combinatorial problems; discrete and absolutely continuous random variables; law of large numbers; central limit theorem; estimation; hypothesis testing; confidence intervals; maximum likelihood methods; non-parametric methods and robustness.

30-411. *Number Theory* Three Credit Hours

Prerequisite: 30-132 or 30-202.

Required for B.S. degree in Mathematics.

The Euclidean algorithm; prime and composite integers; elementary Diophantine equations; Pythagorean triples; Euler's phi-function; congruences; Euler-Fermat theorems; exponents and primitive roots; quad- atic residues.

30-412. *History of Mathematics* Three Credit Hours

Prerequisite: 30-131 or 30-202.

A survey of the development of mathematics from the time of the ancients to the present; analysis of causes for the retardation of the advancement of mathematics in different centuries; selected readings from significant areas of mathematics used to show the contributions of mathematics to the development of science.

30-414. *Topology* Three Credit Hours

Prerequisite: 30-303 or approval of department head.

Required for B.S. degree in Mathematics.

Set axioms, functions, relations, well ordering, topological spaces, continuity, separation, metric spaces, compactness, connectedness.

30-415 and 30-416. *Reading Courses* Three Credit Hours Each Semester

Prerequisite: exceptional ability and background, and approval of department head.

Directed reading on assigned topics in mathematics; weekly conferences with the instructor; a formal paper.

30-420. *Senior Research Project* Three Credit Hours

Prerequisite: exceptional ability and background, and approval of department head.

A research project and formal paper. Recommended for students planning graduate work. Approval for enrollment based on capability of applicant and the acceptance of a written proposal.

30-422. *Complex Analysis* Three Credit Hours

Prerequisite: 30-322 or approval of department head.

A course which features a variety of topics in advanced analysis to meet the needs of seniors who are not engaged in the senior research project, 30-420; selected topics from complex function theory; complex functions, sequences and limits; complex differentiation and integration; Cauchy theorem; complex series and uniform convergence; harmonic functions.

Computer Science

The Department of Mathematics, in cooperation with the Computer Center, offers a group of courses in computer science designed to meet the needs of several categories of students.

All business administration majors are required to take 36-305 (Computer Principles). They may then elect 36-306 (Management Information Systems) or 36-311 and 36-312 (Methods of Operations Research). Since all college graduates should be able to deal effectively with computers, political science majors, education majors, or other arts majors are encouraged to take 36-205 (Introduction to Computing) followed by 36-306, 36-311, or 36-312 as electives. Students in the Naval ROTC program may use 36-205 (Introduction to Computing) to satisfy the computer science requirement.

Students majoring in biology or chemistry may wish to take some or all of the courses listed above, or they may prefer to elect the sequence of courses recommended below for other science students.

Those majoring in electrical engineering or physics should take 36-207 (Introduction to Fortran) in the sophomore year, followed by 36-301 (Applied Numerical Methods) in the junior year. Students who want to prepare themselves for a career in the field of computers will want to take as many other computer science courses as possible, as well as 20-427 (Digital System Fundamentals) and 20-428 (Digital Systems Design).

36-203. *Computer Programming* Two Credit Hours

Offered only in the Evening College.

A more comprehensive treatment of the material covered in 36-207.

36-205. *Introduction to Computing* Three Credit Hours

Required of all mathematics majors; open to others.

Algorithms, programs, and computers. Basic programming and program structure. Programming and computing systems. Debugging and verification of programs. Data representation. Organization and characteristics of computers. Survey of computers, languages, systems, and applications. Computer solution of several numerical and non-numerical problems, using one or more programming languages.

36-206. *Introduction to Discrete Structures* Three Credit Hours

Prerequisite: 36-205.

Review of set algebra including mappings and relations. Algebraic tructures including semigroups and groups. Elements of the theory of irected and undirected graphs. Boolean algebra and propositional logic. Applications of these structures to various areas of computer science.

6-207. *Introduction to Fortran* One Credit Hour

Required of electrical engineering and physics sophomores; open to others.

Basic programming in Fortran; practice in flowcharting, writing, and debugging programs with applications in the students' areas of interest.

Lecture: one hour; laboratory: one hour.

36-301. *Applied Numerical Methods* Three Credit Hours

Prerequisites: 36-205 or 36-207, and 30-132.

Required for B.S. degree in Mathematics.

Analysis of computational problems and the development of computer techniques for their solution. An introduction to numerical methods; error analysis; linear systems of equations; zeros of functions; quadrature; numerical solution of differential equations.

36-302. *Computer Organization and Programming* Three Credit Hours

Prerequisite: 36-205 or 36-207.

Logical basis of computer structure; machine representation of information; flow of control; instruction codes; subroutines; linkages; macros; interpretive and assembly systems.

36-305. *Computer Principles* Three Credit Hours

Prerequisite: 5-205 (Business Statistics) or 30-211 (Introductory Statistics.)

Required of business administration juniors; open to others.

Introduction to programming languages; flowcharting; package utilization. Examples and problems in information retrieval, accounting and statistics.

36-306. *Management Information Systems* Three Credit Hours

Prerequisite: 36-205 or 36-305.

Design of large-scale, computer-oriented information systems. Data collection, file organization, directory construction, and search techniques. On-line information retrieval, retrieval models and processes.

36-311 and 36-312. *Methods of Operation Research* Three Credit Hour
Each Semeste

Prerequisite: 36-205 or 36-305.

Applications and elementary theory of selected topics from operations research. Topics included are linear algebra, linear and non-linea programming, transportation and assignment problems, network analysis, game theory, dynamic programming, queing theory, and Markov processes. Applications to managerial problems, economic behavior and military strategy are considered. 36-311 is a prerequisite for 36-312

36-313. *Introduction to Cobol* Three Credit Hours

Basic programming in Cobol (structured approach); practice in writing and debugging programs with applications in business and mathematics.

36-401. *Data Structures* Three Credit Hours

Prerequisite: 36-206.

Basic concepts of data. Linear lists, strings, arrays, and orthogonal lists. Representation of trees and graphs. Storage systems and structures, and storage allocation and collection. Multilinked structures. Symbol tables and searching techniques. Sorting (ordering) techniques. Formal specification of data structures, data structures in programming languages, and generalized data management systems.

36-402. *Programming Languages* Three Credit Hours

Prerequisite: 36-401 or approval of department head.

Formal definition of programming languages including specification of syntax and semantics. Simple statements including precedure, infix, prefix, and postfix notation. Global properties of algorithmic languages including scope of declarations, storage allocation, grouping of statements, binding time of constituents, subroutines, coroutines, and tasks. List processing, string manipulation, data description, and simulation languages. Runtime representation of program and data structures.

Department of Military Science

Professor: Gibler
Assistant Professors: Axson, Butzer, Hall, Hughes, Irby, Macpherson, Reiss, Rich, Sawtelle, Zinser

Army ROTC at The Citadel endeavors to enlighten participating cadets with a variety of subjects dealing with matters of importance and value to all, regardless of their eventual choice of vocations. Army curriculum philosophy is to provide instruction on subjects that will complement the cadet's military or civilian goal. In essence, it enables him to develop attributes and understandings that will either accelerate his advancement within a civilian administrative structure or facilitate his transition into the profession of arms. This is accomplished by use of a core curriculum with leadership, management, and small-group dynamics as the unifying subject matter.

Military science is a four-year program of instruction divided into a two-year basic program and a two-year advanced program. The first year of the former addresses the role of the individual soldier both historically through instruction in world military history and practical training in the areas of marksmanship, rappelling, land navigation, and leadership. The second year builds upon the first through the study of small-unit tactics, a continuation of leadership-management principles, and United States military history during the 18th and 19th centuries.

The first year of the advanced course commences with instruction in communicative skills, followed by a comprehensive study of leadership theory, a historical survey of World War I and World War II, and principles of advanced land navigation. The year concludes with instruction on platoon level tactical operations. At the conclusion of the junior year, students who have Army contracts participate for six weeks at advanced camp, which trains them as prospective officers. The final year of the advanced program consists of instruction in military logistics, administration and justice, advanced management practices, the dynamics of the combined arms team, and a survey of military conflict from Korea to the present.

Course of Instruction

8-101. *Introduction to the Skills of the Individual Soldier and U.S. Defense and National Security* One Credit Hour
(First Semester—Fourth Class Year)

The semester provides the student with instruction in rappelling, basic mountaineering, and individual tactical skills and techniques to include an introduction to land navigation. Initial instruction is followed by individual weapons and marksmanship training which is employed by small modern tactical units. The semester concludes with an overview and analysis of the defense establishment and its managerial implications in national security affairs.

8-102. *World Military History, Military Geography, and the Principles of Military Leadership* One Credit Hour
(Second Semester—Fourth Class Year)

The students are presented with an introduction to world military history from the ancient Greek phalanx through the Napoleonic wars, with emphasis being placed on the evolution of warfare and the interaction between tactics and armament. The second half of the semester consists of basic land navigation techniques which build upon the information presented in 8-101, followed by an introduction to the basic principles of military leadership.

8-201. *Introduction to Small-Unit Operations, Military Geography, and Modern Management Principles* Two Credit Hours
(First Semester—Third Class Year)

The semester encompasses a study of the organization and tactical operation of the infantry squad with emphasis on the duties and responsibilities of junior officers as leaders of men and managers of material and time. Information presented in 8-102 is developed on an advanced level, providing the student with a high level of competency in the use of military maps and land navigational techniques. The semester concludes with an analysis of the principles used in effective modern management.

8-202. *Advanced Leadership and Introduction to the Military History of the U.S. Army* Two Credit Hours
(Second Semester—Third Class Year)

The initial half of the semester builds upon information presented in 8-102. The development of the student's ability to analyze problems and express himself clearly, accurately, and confidently is emphasized by using case studies in leadership to facilitate an understanding of the four functional areas of leadership and the problems of small-unit leaders. The second half of the semester is devoted to the study of the historical foundations of the U.S. Army from 1700 through 1865, with particular emphasis placed upon the study of the American Revolution and Civil War.

8-301. *Introduction to Methods of Instruction, Leadership Theory, and the History of the U.S. Army During World War I and World War II* Three Credit Hours
(First Semester—Second Class Year)

The initial part of the semester is devoted to teaching students to apply the principles of effective communications through the preparation and presentation of oral presentations. These presentations provide a comprehensive understanding of leadership theory and complement both 8-102 and 8-201. The semester terminates with a historical study of the U.S. Army during both World War I and World War II.

8-302. *Advanced Military Land Navigation Techniques and Small-Unit Tactical Operations* Two Credit Hours
(Second Semester—Second Class Year)

Initially during this semester the student is presented with further advanced studies in the use of military maps and navigational techniques. Advanced military geography instruction is followed by a comprehensive analysis of small-unit tactical operations at the platoon level. Utilizing the basic infantry platoon, the techniques of offensive, defensive, and special operations are examined, with emphasis given to the planning and coordination required of the small-unit leader in varying situations. Instruction culminates with a "free play" 12-hour tactical map exercise.

8-401. *History of the U.S. Army from Korea to the Present and the Theory and Dynamics of the Military Team* Three Credit Hours
(First Semester—First Class Year)

The initial half of this semester is devoted to the history of the U.S. Army from Korea to the present with emphasis being given to the continuing role of the U.S. Army in international conflict. The final half of the semester is devoted to the mechanics of the Army's organization for combat and utilization of the combined arms team. Information concerning the various branches of the U.S. Army is also presented to provide the student with an appreciation of the many varied specialities found within the modern military force.

8-402. *Military Logistics, Administration, and Justice and Advanced Management Practices* Two Credit Hours
(Second Semester—First Class Year)

During this semester, detailed instruction is presented on the Army's logistical, administrative, and judicial systems. Additional emphasis is placed on the study of the concepts utilized in the effective management of various assets in varying situations to prepare the senior cadet for his assumption of duties as an Army lieutenant. The semester concludes with an examination of contemporary military problems and an analysis of the military in its relationship to society.

Department of Modern Languages

Professors: Smith, Pappas, Johnson, Spence
Associate Professor: Ralston
Assistant Professors: Pieper, Warren, Frohlich, Gundel, DeMille, Staley

A student majoring in modern languages must attain a reasonable knowledge of one language, spoken and written, some competence in a second, and a good understanding of the important writers, the literary developments, and the cultures which these languages represent. Upon successful completion he is prepared to do graduate work in the language chosen for his major work.

The four modern languages (Spanish, German, French, and Russian) regularly offered by the department are among the most important because of the wealth of material, both literary and scientific, which has been published in them, and because of the fact that most educated individuals of the Western World, no matter what their mother tongues may be, are fluent in either English or one of these four.

Students who elect languages as their major field must satisfactorily complete a total of eight courses (48 semester hours) in at least two modern languages. Four of these courses (24 semester hours) must be advanced (beyond the intermediate level) and in two modern languages, 6 hours of which must be 301-302 or 305-306. The four advanced courses may be a combination of two in the one language and two in the other, or three in one and one in the other. The 36 semester hours of electives in the junior and senior years allow ample flexibility. In cases of advanced placement, electives required to complete the 48 semester hours may include basic courses in a third or fourth language. Detailed requirements for the major are summarized under "Courses of Study."

The language laboratory constitutes an integral part of all elementary and intermediate courses in the Department of Modern Languages. It provides intensive practice in speaking, listening, and understanding by means of tape recordings designed to provide greater oral-aural facility in the languages offered. Exercises in the laboratory are closely integrated with classroom work.

The following non-department electives are recommended:

50-302, Educational Psychology
60-414, Latin American Affairs
70-305 and 70-306, Europe in the Twentieth Century
70-403 and 70-404, Latin American History
70-410, History of Modern Russia
80-415 and 80-416, The English Language
81-201, Introduction to Philosophy
81-309, Seventeenth and Eighteenth Century Philosophy
81-407, Nineteenth Century Philosophy
81-408, Contemporary Philosophy

Basic Modern Language Courses

(Spanish, German, French, and Russian)

Elementary (101-102)

For all students (majors and non-majors) entering with less than two years of the same foreign language in high school.

Oral-aural pronunciation practice, integrated laboratory exercises, structural elements of the language.

Intermediate (201-202)

Prerequisite: 101-102 or the equivalent.

For all students (majors and non-majors) with two or more years of the same foreign language in high school who are actually qualified to function at the intermediate level. If they elect to start at the intermediate level, they must complete the bypassed 6 hours of elementary language by taking any elective recommended or required by their major department. Otherwise they should start at the elementary level.

Review of the structural elements, integrated laboratory exercises, practice in reading and oral communication.

Key Advanced Courses

(Open to majors and qualified non-majors)

Introductory Survey of Literature (301-302)

Prerequisite: 202 or permission of the department head.

A general survey of either Spanish, German, or French literature from its beginnings to the present time. Either 301-302 or 305-306 is required of all majors.

Advanced Composition and Conversation (305-306)

Prerequisite: 202 or permission of the department head.

Advanced instruction in the practical use of either Spanish, German, or French, stressing current topics of interest. Emphasis on the cultural development and historical aspects of the foreign country. Either 301-302 or 305-306 is required of all majors.

Twentieth Century Literature (409-410)

Prerequisite: 202 or permission of the department head.

Highlights of modern trends in Spanish, German, or French literature.

Spanish

90-101 and 90-102. *Elementary Spanish* — Three Credit Hours Each Semester

90-201 and 90-202. *Intermediate Spanish* — Three Credit Hours Each Semester

90-301 and 90-302. *Introductory Survey of Spanish Literature* — Three Credit Hours Each Semester

90-303 and 90-304. *Spanish-American Literature* — Three Credit Hours Each Semester

Prerequisite: 90-202 or permission of the department head.

Leading works of Spanish-American authors.

90-305 and 90-306. *Advanced Spanish Composition and Conversation* — Three Credit Hours Each Semester

90-401 and 90-402. *Spanish Literature of the Golden Age* — Three Credit Hours Each Semester

Prerequisite: 90-202 or permission of the department head.

Literature of the late sixteenth and seventeenth centuries, the age producing the characters of Don Quixote and Don Juan.

90-409 and 90-410. *Twentieth Century Spanish Literature* — Three Credit Hours Each Semester

German

91-101 and 91-102. *Elementary German* Three Credit Hours Each Semester

91-201 and 91-202. *Intermediate German* Three Credit Hours Each Semester

91-203 and 91-204. *Scientific German* Three Credit Hours Each Semester

Prerequisite: 91-102 or the equivalent (not a substitute for 201-202 in the case of language majors).

For students taking the chemistry, physics, or premedical course. First-year grammar study continued; translation of texts in the various sciences; special stress on sentence structure and wordbuilding.

91-301 and 91-302. *Introduction Survey of German Literature* Three Credit Hours Each Semester

91-303 and 91-304. *German Literature of the Nineteenth Century* Three Credit Hours Each Semester

Prerequisite: 91-202 or permission of the department head.

Representative works of outstanding poets, novelists, and dramatists.

91-305 and 91-306. *Advanced German Composition and Conversation* Three Credit Hours Each Semester

91-401 and 91-402. *Goethe's Faust* Three Credit Hours Each Semester

Prerequisite: 91-202 or permission of the department head.

Goethe's greatest drama, *Faust,* studied in connection with his life and with regard to his message for today.

91-409 and 91-410. *Twentieth Century German Literature* Three Credit Hours Each Semester

French

92-101 and 92-102. *Elementary French* Three Credit Hours Each Semester

2-201 and 92-202. *Intermediate French* Three Credit Hours Each Semester

2-301 and 92-302. *Introductory Survey of French Literature* Three Credit Hours Each Semester

2-305 and 92-306. *Advanced French Composition and Conversation* Three Credit Hours Each Semester

92-403 and 92-404. *Eighteenth Century French Literature* Three Credit Hours Each Semester

Prerequisite: 92-202 or permission of the department head.

Political and philosophical thought in the eighteenth century, traced hrough writings of Montesquieu, Voltaire, and Rousseau.

92-405 and 92-406. *The Classical Period of French Literature* Three Credit Hours Each Semester

Prerequisite: 92-202 or permission of the department head.

The literature of the Classical Period, that of France's most distinctive and in many respects finest contribution to the world's literature and culture; special attention given to the plays of Corneille, Racine, and Moliere.

92-407 and 92-408. *Nineteenth Century French Literature* Three Credit Hours Each Semester

Prerequisite: 92-202 or permission of the department head.

French literature from Chateaubriand to Zola and Anatole France; the romantic, realistic, and naturalistic movements, with special emphasis on Balzac, Hugo, and Flaubert.

92-409 and 92-410. *Twentieth Century French Literature* Three Credit Hours Each Semester

Russian

99-101 and 99-102. *Elementary Russian* Three Credit Hours Each Semester

99-201 and 99-202. *Intermediate Russian* Three Credit Hours Each Semester

Additional Languages

(Offered when demand justifies)

93-101 and 93-102.	*Elementary Portuguese*	Three Credit Hour Each Semeste
93-201 and 93-202.	*Intermediate Portuguese*	Three Credit Hour Each Semeste
94-103 and 94-104.	*English as a Foreign Language*	Three Credit Hour Each Semeste
97-101 and 97-102.	*Elementary Latin*	Three Credit Hour Each Semeste
97-201 and 97-202.	*Intermediate Latin*	Three Credit Hour Each Semeste
98-101 and 98-102.	*Elementary Greek*	Three Credit Hour Each Semeste
98-201 and 98-202.	*Intermediate Greek*	Three Credit Hour Each Semeste

All Modern Languages

90-421 and 90-422. 91-421 and 91-422. 92-421 and 92-422.	*Directed Individual Study*	Three Credit Hours Each Semester

Open to seniors only, and only with permission of department head.

Department of Naval Science

Professor: Moss
Assistant Professors: Spivey, Johnson, Porter, Neihart, Kerr, Viverito, Thayer

The Navy/Marine Corps instructional plan consists of requirements for completion of an academic major supported by designated electives and professional naval science courses taught by Navy and Marine Corps officers. The basic naval science instructional plan makes full use of the total Citadel faculty for maximum academic exposure.

The Naval Science Program is comprised of Navy/Marine (NROTC) Scholarship students and Navy/Marine (NROTC) College Program students, all of whom earn commissions in either the Navy or Marine Corps upon graduation. Because of the highly technical requirements of the modern Navy, these students are strongly encouraged to pursue chemistry, physics, mathematics, or engineering as their major course of study. Navy-option NROTC Scholarship students, irrespective of their major, must complete two semesters of calculus by the end of their sophomore year and two semesters of physics by the end of their junior year. Navy-option NROTC Scholarship students who are not majoring in the scientific disciplines are strongly encouraged to take selected scientific courses to better prepare them for service with the fleet. Navy-option students who elect to pursue a reserve commission through participation in the College Program (non-scholarship) are also strongly encouraged to pursue a major course of study in chemistry, physics, mathematics, or engineering. If, however, a student elects to major in a course of study other than chemistry, physics, mathematics, or engineering, he must complete two semesters of calculus and one semester of physics before he may compete for a professor of naval science NROTC scholarship. Navy-option College Program students who pursue a major course of study in chemistry, physics, mathematics, or engineering will be given preference for consideration for direct appointment to NROTC scholarship status. If a student has no desire or is otherwise ineligible to compete for a professor of naval science NROTC scholarship but still desires to be commissioned as a reserve officer through the NROTC College Program, he will be required to complete History of Modern Warfare or History of Naval Warfare (70-315 or 70-205) and National Security Policy (60-313) unless majoring in one of the hard sciences.

Because of the differing requirements of the Marine Corps, Marine-option NROTC Scholarship and College Program students are not required to complete any of the scientific courses specified for Navy-option students. Marine-option College Program students compete for professor of naval science NROTC scholarships on this basis. Marine-option students are encouraged, however, to consider a major course of study in chemistry, physics, mathematics, or engineering. Marine-option Scholarship and College Program students not pursuing scientific courses of study are required to complete History of Modern Warfare or History of Naval Warfare (70-315 or 70-205) and National Security Policy (60-313).

Students not qualified for or not desiring commissions in the Naval Service may enroll in naval science courses to fulfill Citadel ROTC requirements and will receive academic credit for them.

Sequence of Naval Science Courses

- Fourth Class Year
  - All Naval cadets
    - 9-101 (Introduction to Naval Science)
    - 9-102 (Naval Ships Systems I (Engineering))
- Third Class Year
  - All Naval cadets
    - 9-201 (Naval Ships Systems II (Weapons))
    - 9-202 (Seapower and Maritime Affairs)
- Second Class Year
  - Candidates for U.S. Navy commissions
    - 9-301 (Navigation)
    - 9-302 (Naval Operations)
  - Candidates for U.S. Marine Corps commissions
    - 9-303 (Evolution of Warfare I)
    - 9-304 (Evolution of Warfare II)

First Class Year
  Candidates for U.S. Navy commissions
    9-401 (Naval Leadership and Management I)
    9-402 (Naval Leadership and Management II)
  Candidates for U.S. Marine Corps commissions
    9-403 (Amphibious Warfare)
    9-404 (The Marine Company Grade Officer)

Description of Courses

9-101. *Introduction to Naval Science* One Credit Hour

This course provides the student with a basic understanding of the mission, organization, regulations, and broad warfare components of both the Navy and Marine Corps. Included is an overview of officer and enlisted rank and rating structures, procurement and recruitment, training and education, promotion and advancement, retirement policies, courtesy and customs, discipline, leadership, ship's nomenclature, and challenges facing today's Navy and Marine Corps officers. (Navy and Marine faculty taught.)

9-102. *Naval Ships Systems I (Engineering)* Three Credit Hours

This course provides the student with a basic understanding of the types, structure, and purpose of naval ships. Details of ship compartmentation, propulsion systems, auxiliary power systems, interior communications, ship design, and ship stability characteristics are examined. (Navy faculty taught.)

9-201. *Naval Ships Systems II (Weapons)* Two Credit Hours

This course provides the student with a basic understanding of the theory and applicable principles relating to the operation of naval weapons systems. Details of weapons coverage, by type, and fire-control systems, including capabilities and limitations, target acquisition, identification and tracking of targets, trajectory principles, and basics of naval ordnance are examined. Principles of the use of electronic components, computer functions, and sound energy are included. (Navy faculty taught.)

9-202. *Seapower and Maritime Affairs* One Credit Hour

This course provides the student with a basic knowledge of seapower and maritime affairs. It is oriented toward the general concept of seapower, including the United States Marine Corps and Merchant Marine, the role of various warfare components of the Navy and Marine

Corps in supporting the Navy's mission, the application of seapower as an instrument of national power, and a comparative study of United States and Soviet Naval strategies. (Navy and Marine faculty taught.)

9-301. *Navigation* Three Credit Hours

This course provides the student with a working knowledge of the theory and practice of piloting and celestial navigation. Includes radar navigation, lines of position, fixes, complete sight reduction by *Hydrographic Office Publication 229* and the *Nautical Almanac,* and a brief introduction to electronic navigation systems. Practical applications are stressed in weekly exercises. (Navy faculty taught.)

9-302. *Naval Operations* Three Credit Hours

Prerequisite: 9-301.

This course provides the student with a detailed survey of the Rules of the Nautical Road and the theory and use of maneuvering boards for solution of relative motion problems. Also introduced are various other topics, including weather, shiphandling, and naval communications. (Navy faculty taught.)

9-303. *Evolution of Warfare I* Three Credit Hours

This course provides the student with a general knowledge of the art and concepts of warfare and its evolution from the beginning of recorded history to the present. Included are the considerations of the influence that leadership, political, economic, sociological, and technological factors have had on warfare and the theoretical principles behind modern strategy and tactics. (Marine faculty taught.)

9-304. *Evolution of Warfare II* Three Credit Hours

This course enables the student to acquire a working knowledge of the more practical aspects of warfare and the United States Marine Corps. The general principles of warfare addressed in 9-303 are considered as they relate to the small unit level. Tactical aspects of offensive and defensive combat are examined in detail. The student is given the opportunity to master basic skills required of the small unit leader with an emphasis on land navigation. (Marine faculty taught.)

9-401. *Naval Leadership and Management I* Two Credit Hours

This course provides the student with a basic understanding of the fundamental concepts and principles of naval leadership and manageent. Theoretical aspects of the management functions and processes re examined, and their applications to the naval profession are disussed. In addition, motivation and motivational theories, counseling echniques, and effective communicative skills are studied and applied o naval leadership and management roles. This course is taught using ectures, experimental exercises, case studies, self-study exercises, and ole-playing exercises. The goal of this course is to provide students vith the fundamental concepts, principles, and sources of information ecessary to establish a sound basis for their initial performance and uture growth as junior Navy officers.

This course also provides students with the values and motivation vhich prepare them for service with the sense of honor and integrity equired of a commissioned naval officer. (Navy faculty taught.)

-402. *Naval Leadership and Management II* One Credit Hour

This course provides the student with guidelines for assuming his duties and responsibilities as a junior Navy officer during his initial tour of duty following graduation and commissioning. In addition, this course familiarizes the student with and helps him develop an understanding of the duties and responsibilities of the junior naval officer and shipboard division officer in the following leadership areas: human resources management, personnel management, material management, and division discipline administration. This course also prepares the student for the personal and professional responsibilities that he will encounter immediately upon commissioning. This is the final course in the Naval ROTC curriculum, and it synthesizes the managerial and professional competencies developed by the students in the previous summers' at-sea training and previous naval science courses. This course provides a capstone in all major areas of naval leadership immediately prior to commissioning. (Navy faculty taught.)

9-403. *Amphibious Warfare* Three Credit Hours

This course provides the student with a basic understanding of the concept of projecting seapower ashore through use of both waterborne and helicopterborne amphibious forces. Details concerning the evolution of amphibious warfare as an element of naval power and instrument of national strategy combined with applicable principles and techniques of conducting amphibious warfare are examined. (Marine faculty taught.)

9-404. *The Marine Company Grade Officer* No Credit

This course provides the student with a basic understanding of the company grade officer's responsibilities within the Marine Corps, en phasizing his role as a junior commander and staff officer, and cor centrating upon command and staff relationships, effective coordina tion, administration, training, counseling, military justice, and othe Marine officer responsibilities. (Marine faculty taught.)

Department of Physical Education

Professors: Ezell, Feigl
Associate Professors: Smyth, Styles, Hamilton
Assistant Professors: Cronan, Wilson

The purpose of the Department of Physical Education is to provide experiences which will lead to the acquisition of skills, knowledge, and attitudes within the domains of human movement and healthful living, contributing to an improved quality of life. These experiences are available through four distinct yet intersecting programs which progressively increase in breadth and intensity.

Required Physical Education Program

The primary objective of the RPE program is to provide basic instruction in adult physical fitness and recreational sports which will be of immediate and lasting value for each cadet. All cadets are required to complete four semesters of RPE.

Fourthclassmen (Freshmen)

All freshman cadets must successfully complete two semesters of RPE. The fall semester consists of a comprehensive adult physical fitness course, Foundations of Physical Education (57-101). The purpose of this course is to provide basic information in the areas of exercise physiology, diet, and weight control and various exercise programs which will aid the cadet in making intelligent decisions regarding future participation in physical activity.

During the spring semester each cadet must enroll in one of the following courses in accordance with his interest and/or skill level.

57-103. *Survival Swimming*

A beginning swimming course designed for adults who are classified as non-swimmers or poor swimmers. Required of all cadets who do not pass the test of minimal swimming ability administered by the Department of Physical Education.

This course formerly was numbered 59-103.

57-105. *Intermediate Swimming*

A course consisting of instruction in the five basic swimming strokes, self-rescue, and basic lifesaving techniques.

This course formerly was numbered 59-105.

57-106. *Beginning Wrestling*

A course which introduces the student to the basic skills, rules, and strategies of amateur wrestling.

This course formerly was numbered 59-106.

57-107. *Team Handball*

A course which combines features of soccer and basketball into a fast-moving, exciting team game. Emphasis is placed on learning the individual skills and strategies which comprise a coordinated team effort.

This course formerly was numbered 59-107.

57-108. *Tumbling and Apparatus*

A course providing instruction in the basic skills in seven events (tumbling, side horse, still rings, vaulting, parallel bars, horizontal bar, and trampoline) leading to the development of routines of these events along with safety, spotting, rules, and terminology.

This course formerly was numbered 59-108.

57-109. *Fundamental Basketball*

This course provides instruction in basic skills such as dribbling, passing, shooting, and rebounding, and the use of these skills and strategies in a team effort.

This course formerly was numbered 59-109.

57-110. *Psychomotor Development*

A course providing an individualized approach to basic sport skills including, but not limited to, cardiovascular and muscular endurance, strength, flexibility, and agility.

This course formerly was numbered 59-110.

7-228. *Advanced Lifesaving (ARC)*

A course which meets the requirements of the American Red Cross and NCA. Successful completion of the course may result in ARC certifiation.

This course formerly was numbered 59-228.

7-233. *Water Safety Instructor (ARC)*

An instructor's course which may result in ARC certification for all evels of swimming.

This course formerly was numbered 59-233.

Thirdclassmen (Sophomores)

All sophomore cadets must successfully complete two semesters of RPE selected from the following courses.

57-220. *Archery*

A course which provides instruction in the basic knowledge and skill aspects of target archery.

This course formerly was numbered 59-220.

57-221. *Badminton*

A course which teaches knowledge, skills, and strategy necessary to participate in badminton as a lifetime sport.

This course formerly was numbered 59-221.

57-222. *Bowling*

A course which teaches etiquette, scoring, and basic skills necessary to compete in bowling as a recreational pursuit.

This course formerly was numbered 59-222.

57-223. *Fencing*

A course which teaches basic knowledge, skill, and strategy aspects of competitive foil fencing.

This course formerly was numbered 59-223.

57-224. *Beginning Golf*

A course which teaches grip, stance, and swing development, as well as knowledge of rules and strategy of recreational and competitive golf.

This course formerly was numbered 59-224.

57-225. *Handball*

An introduction to the rules, skills, and strategies required for singles doubles, and "cut-throat" play.

This course formerly was numbered 59-225.

57-226. *Judo*

A comprehensive coverage of the history, dojo etiquette, ukemi (break fall), nagewaza (throwing), and ne-waza (grappling) techniques.

This course formerly was numbered 59-226.

57-227. *Skin and Scuba Diving*

Techniques of using mask, snorkel, and fins and scuba equipment ar taught. Lectures are presented to acquaint the student with scientifi information related to underwater physics and physiology.

This course formerly was numbered 59-227.

57-228. *Advanced Lifesaving (ARC)*

A course which meets the requirements of the American Red Cross and CNCA. Successful completion of the course may result in ARC certification.

This course formerly was numbered 59-228.

57-229. *Beginning Tennis*

A course which emphasizes grip, stance, footwork, and basic movement patterns in the execution of serve and ground strokes and stresses knowledge of rules and etiquette.

This course formerly was numbered 59-229.

57-230. *Weight Training*

A course which stresses proper lifting techniques as well as knowledge about the relationship between weight training and various sports programs.

This course formerly was numbered 59-230.

57-231. *Trampolining*

A course covering basic, intermediate, and advanced skills and routines in which the student progresses at his own rate.

This course formerly was numbered 59-231.

57-232. *Volleyball*

A course which teaches the "big four" (serve, pass, set, and spike) as well as the knowledge and strategy necessary to participate successfully in a team effort.

This course formerly was numbered 59-232.

57-233. *Water Safety Instructor (ARC)*

An instructor's course which may result in ARC certification for all levels of swimming.

This course formerly was numbered 59-233.

57-234. *Jogging*

A course which is concerned with the physiological benefits of jogging as a means of gaining and maintaining a satisfactory level of fitness.

This course formerly was numbered 59-234.

57-235. *Intermediate Tennis*

Prerequisite: 59-229 (Beginning Tennis) or equivalent.

Course assumes at least minimal skills (such as serve, forehand, and backhand ground strokes); teaches more advanced skills such as lob, smash, and net play in addition to advanced strategy of singles and doubles play.

This course formerly was numbered 59-235.

57-236. *Sailing and Canoeing*

A course which teaches basic knowledge and skill concerning small sailing craft and canoes.

This course formerly was numbered 59-236.

57-237. *Soccer*

A course designed to teach the student the skill, knowledge, and strategy necessary for successful participation in recreational or competitive soccer.

57-238. *Track and Field*

A course which introduces the student to basic running and field events, emphasizing the mechanics, skills, and strategies necessary for successful participation.

57-239. *Flag Football*

A course which teaches a modified version of regular football to limit contact, with special emphasis on rules and strategies of play.

57-240. *Sigma Delta Psi*

A course designed to prepare the student for the tests administered by this national athletic fraternity.

57-241. *Modern Bicycling*

A study of modern multispeed bicycling, emphasizing the elements of care, maintenance, and safety and the techniques of physical preparation for racing and touring. Students must have their own bicycles.

57-242. *Orienteering*

A presentation of the skills for cross-country running with map and compass.

57-243. *Water Skiing*

A progressive presentation of water skiing skills from land drills through proper power boat handling to basic, intermediate, and advanced techniques with double and single (slalom) equipment.

57-244. *Snow Skiing*

A comprehensive course which includes pre-skiing conditioning, dressing for the elements, equipment, chairlift and tow-rope safety, and skiing under various conditions.

Intramural Athletic Program

The intramural program represents an integral part of the cadet's life and is, therefore, recommended for all cadets not involved in intercollegiate sports or competitive athletic clubs. The program consists of 23 different activities including both individual and team sports which lead to physical and mental fitness. All team activities have been separated for freshman and upperclass participation to give all cadets an opportunity to engage in the more vigorous competitive sports.

Badminton
Basketball (FR)
Basketball (UC)
Basketball Freethrow
Basketball Golf
Bowling (FR)
Bowling (UC)
Flag Football (FR)
Flag Football(UC)
Golf
Gymnastics
Handball
Racketball
Sigma Delta Psi
Softball (FR)
Softball (UC)
Steeplechase
Swimming
Table Tennis
Team Handball
Tennis
Track
Volleyball (FR)
Volleyball (UC)
Water Polo
Weight Lifting
Wrestling

Note: For further information regarding the intramural program see the handbook, *Intramurals, Sports Clubs and Recreation - The Citadel.*

Sports Club Program

The Sports Club program is administered through the Department of Physical Education by a council composed of representatives from each of the various clubs. Currently bicycling, bowling, crew, fencing, gymnastics, lacrosse, martial arts, parachute, pistol, rugby, sailing, and surfing clubs hold membership on the council.

Note: For further information regarding the Sports Club program see the handbook, *Intramurals, Sports Clubs and Recreation - The Citadel.*

The Physical Education Major

The primary purpose of the professional preparation program is to prepare the major for teaching within the broad field of physical education. In addition, our students have proven to be well prepared for graduate study at The Citadel (Master of Education) or at other institutions offering study in physical education.

The professional physical educator must have an understanding of the meaning and significance of movement, the growth and development of the individual, and the application of physical biological and behavioral sciences to the actual teaching/learning process. The curriculum in physical education is designed to progressively build upon meaningful experiences and concepts acquired within other disciplines as well as those which are unique to the profession. In addition, competencies which have been identified with successful teaching methodology are also an integral part of the following courses.

59-101. *Introduction to Physical Education* Three Credit Hours

An introductory survey of physical education; historical background, scope, and function of physical education; its aims, objectives, and principles.

This course formerly was numbered 59-201.

59-102. *Learning Theory and Methodology in Physical Education* Three Credit Hours

A presentation of basic learning theory and methodology as related to the acquisition of gross motor skills.

59-205. *Measurement and Evaluation in Physical Education* Three Credit Hours

A course which includes test selection and administration, analysis, and interpretation of data for various cognitive, affective, and psychomotor parameters commonly associated with physical education.

This course formerly was numbered 59-412 and listed as Tests and Measurements in Physical Education.

59-240. *Methods of Teaching Wrestling* Two Credit Hours

Prerequisite: 59-101 or 50-201.

A course designed to explore the various aspects of wrestling such as the history and development, mechanical principles, training techniques, and offensive and defensive strategies.

59-241. *Methods of Teaching Soccer* Two Credit Hours

Prerequisite: 59-101 or 50-201.

A comprehensive study of the history, rules, training techniques, strategies, and other cognitive elements.

59-242. *Methods of Teaching Lifetime Sports* Two Credit Hours

Prerequisite: 59-101 or 50-201.

A methodological treatment of selected contemporary lifetime sports which may include, but not be limited to, racket sports, golf, archery, and bowling.

59-243. *Methods of Teaching Aquatics* Two Credit Hours

Prerequisite: 59-101 or 50-201.

A comprehensive coverage of teaching methods as applied to beginning through competitive swimming, basic through advanced lifesaving, aquatic games, and small craft safety.

59-244. *Methods of Teaching Rhythmic Activities* Two Credit Hours

Prerequisite: 59-101 or 50-201.

A methodological treatment of fundamental rhythmics, creative rhythmics, traditional dance steps, folk dance, square dance, social dance, singing games, and polyrhythmic activities for the elementary grades through high school.

9-314. *Kinesiology* Three Credit Hours

Prerequisites: 47-303 and 47-304.

The anatomical and mechanical analysis of functional posture and iotor performance for the purpose of understanding and recognizing fficient and inefficient movement.

This course formerly was numbered 59-414.

9-340. *Methods of Teaching Baseball* Two Credit Hours

Prerequisite: 59-101 or 50-201.

An in-depth study of the history, rules, development, equipment, theo-y, and strategy of contemporary baseball.

59-341. *Methods of Teaching Track and Field* Two Credit Hours

Prerequisite: 59-101 or 50-201.

A thorough analysis of all aspects including historical, developmental, nechanical, and technical components.

59-342. *Methods of Teaching Basketball* Two Credit Hours

Prerequisite: 59-101 or 50-201.

A comparative study of defensive and offensive systems of team play; analysis of the basic individual skills and team strategy; and interpretation of rules and knowledge of officiating.

59-343. *Methods of Teaching Gymnastics* Two Credit Hours

Prerequisite: 59-101 or 50-201.

A presentation of historical and theoretical aspects of gymnastics, tumbling, and developmental activities with respect to skills, teaching methods, and the conduct of gymnastic meets.

59-344. *Methods of Teaching Football* Two Credit Hours

Prerequisite: 59-101 or 50-201.

A comparative presentation of offensive-defensive systems of play with attention also given to the placement of personnel, training techniques, drills, rules, and strategies.

59-400. *Directed Teaching* Six Credit Hours

Observation and teaching in an approved school under the direction of a cooperating teacher and a college supervisor.

59-402. *Care and Prevention of Athletic Injuries* Three Credit Hou

Discussion, demonstration, and application of the skills and procedure utilized in athletic training.

59-403. *Special Physical Education* Three Credit Hour

Identification of various physical, mental, and emotional anomalie with implications for physical education. Attention is given to procedure involved in "mainstreaming" the special student as well as procedure employed in the special school.

59-404. *Administration of Physical Education* Three Credit Hour

A study of administrative philosophy and procedures which relate t curriculum and program development, finance, budgets and purchasing and the legal aspects of teaching and coaching.

This course formerly was numbered 59-401 and listed as Organization and Administration of Physical Education.

59-406. *Directed Field Experience* Three Credit Hour

Open as an elective to senior physical education majors only.

A controlled exposure to professional experiences in a selected area which may include, but not be limited to, athletic coaching, athletic training, physical therapy, intramurals, recreation, recreation therapy, and public health education.

59-408. *Introduction to Sports Psychology* Three Credit Hours

Analysis and interpretation of current research in the areas of maturation and development, learning theory, perception, personality, motivation, and group dynamics which relate directly to physical education and competitive athletics.

59-417. *Intramural and Recreation Programs* Three Credit Hours

A study of the history, philosophy, and practical and theoretical bases of intramural and recreation programs.

59-419. *Physiology of Exercise* Three Credit Hours

Prerequisites: 47-303 and 47-304.

An in-depth study of the effect of exercise upon the components of physical fitness, including but not limited to strength, muscular endurance, flexibility, and cardiovascular-respiratory endurance.

This course formerly was numbered 59-416.

59-420. *Senior Research Project* Three Credit Hours

A research problem conducted as an independent study. The topic and procedure for this study must be approved by the department faculty.

59-431. *Administration of Interschool Athletics* Three Credit Hours

A study of the policies and procedures involved in interschool athletic administration.

59-432. *Methods of Athletic Coaching* Three Credit Hours

A practical application of research in the areas of learning conditions, practice and training schedules, and selection, analysis, and placement of skills; evaluation and selection of personnel; and coach-player interaction.

59-433. *Elementary School Physical Education* Three Credit Hours

A study of the progressively graded program of activities for the elementary schools, grades K-6. Theoretical as well as practical material will be developed for each grade.

Health Education Courses

The following block of courses represents an opportunity for the student to take health education courses as electives within various curricula. These courses may then be applied toward teacher certification in health education (24 semester hours).

58-101. *Personal and Community Health* Three Credit Hours

The presentation of a body of knowledge from the biological and social sciences considered essential in making sound decisions regarding health maintenance and conducive to the development of proper health values.

This course formerly was numbered 59-301.

58-300. *First Aid and Emergency Care* Three Credit Hours

A comprehensive coverage of safety concepts and accident prevention as well as the presentation of specific topics such as the cursory examination, wounds, traumatic shock, asphyxia, cardiac arrest, burns, toxins, and bone, joint, and muscle injuries.

58-401. *Nutrition* Three Credit Hours

A detailed study of the primary nutrients essential to health with attention given to specific needs from infancy through adulthood. Current theories and practices related to physical and intellectual performance are also investigated. Contemporary topics are presented such as degenerative diseases, food-borne diseases, fad dieting, food additives, and health foods.

58-402. *Drug and Substance Abuse* Three Credit Hours

An in-depth study of the characteristics of commonly abused drugs and substances and the reasons for their abuse.

58-403. *Human Sexuality* Three Credit Hours

A comprehensive presentation of all facets of human sexuality with attention given to appropriate methods of instruction for elementary, middle, and secondary schools.

58-404. *Public Health* Three Credit Hours

An analysis of public health trends, services, funding, and organization of local, state, and federal agencies.

58-406. *The School Health Program* Three Credit Hours

A study of the total school health program and the role of the teacher within the program.

This course formerly was numbered 59-405 and listed as Health Education.

Teacher Certification Requirements—Health Education

*47-303	Human Anatomy	— 3 credit hours
*47-304	Human Physiology	— 3 credit hours
47-406	Ecology	— 3 credit hours
51-307	Mental Hygiene	— 3 credit hours
*58-300	First Aid and Emergency Care	— 3 credit hours
58-401	Nutrition	— 3 credit hours
58-402	Drug and Substance Abuse	— 3 credit hours
58-403	Human Sexuality	— 3 credit hours
58-404	Public Health	— 3 credit hours
*58-406	The School Health Program	— 3 credit hours

*Required courses

Department of Physics

Professor: Bender
Associate Professors: Byrd, Berlinghieri
Assistant Professors: Bailey, Voegeli, Byrne

Physics, the study of matter and radiation, is basic to all other sciences and to engineering disciplines. Developments such as radar, the transistor, integrated circuitry, lasers, computers, and space science were primarily the creations of the research physicist, and present-day research in fundamental particles, plasmas, field theory, and solid-state physics promises a rich harvest of revolutionary devices in the near future.

The Department of Physics offers three introductory courses. For the non-science major or the future teacher, 26-203 and 26-204 (Physics for Liberal Arts Majors) constitute a survey course which emphasizes basic principles, with particular attention paid to the exciting developments of today's research efforts and applications to modern technology. For the scientist, engineer, and mathematician, 26-110, 26-211, and 26-212 (Physics for Engineers and Physical Scientists) cover the fundamental principles of physics. For the biologist and potential doctor or dentist, 26-205, 26-206, and 26-207 (Physics for Biology and Premedicine) offer the basic principles, but with emphasis on the ideas and techniques which apply to these fields. Descriptive courses in elementary astronomy, 26-201 and 26-202, are provided as electives.

The program for physics majors is flexible in that the student who does not intend to make his livelihood in physics, but wishes to obtain insight into our scientific and technological civilization, can take the same formal courses as the dedicated student who plans on going to graduate school or to work in an industrial, testing, or government institution. While the student may switch from one category to another, the standards and academic work expected will be more rigid for the prospective scientist.

The department sponsors a student section of the American Institute o Physics to provide extracurricular activities and training for physic students. 26-419 (Research Planning) and 26-420 (Senior Researc Project) are flexible in that they offer a choice of preparing a theoretica study project or designing and building the necessary apparatus t measure an important experimental result of recent times. Stress is place on the coming world of digital electronics where so many of today' measurements are linked to computers and where apparatus of increasin complexity is commonplace.

The physics major will normally take the program as listed on pages 12 and 127. At the discretion of the head of the department, modern languag may be postponed one year, and up to 6 credit hours in courses numbered above 300 in scientific fields may be substituted for an equal number o required credit hours in physics courses numbered above 300.

26-101. *Modern Physics Lectures* One Credit Hour

Required of all freshmen majoring in physics.

A non-mathematical course consisting of lectures on modern physics topics. Class notes and library reading will be required.

Lecture: one hour.

26-110, 26-211, and 26-212. *Physics for Engineers and Physical Scientists* Four Credit Hours Each Semester

Prerequisite: 30-131 (Analytic Geometry and Calculus). (May be taken concurrently with 30-131 with permission of the heads of the student's major department and the Department of Physics.) 26-110 is a prerequisite for 26-211 and 26-211 is a prerequisite for 26-212.

Required of all students majoring in engineering, mathematics, chemistry, or physics.

Mechanics, electricity and magnetism, heat, sound, light, and modern physics covered with no assumption of prior knowledge of physics; laboratory of about 14 individual quantitative experiments each semester based on fundamental principles.

Lecture: three hours; laboratory: two hours.

26-201. *Astronomy* Three Credit Hours

A descriptive treatment of the general astronomy of the solar system. The constellations as seen from our moving earth, along with a study of planets, comets, and their origins. Planetarium showings and live telescope viewing will be provided.

Lecture: three hours.

6-202. *Astronomy* Three Credit Hours

The universe outside the solar system. The sun as a typical star. The Milky Way and other galaxies are studied along with their past and future. Explanations of pulsars, quasars, novae, cosmic dust. Finally, the extent of the universe, current cosmological models. This course may be taken ndependently of 26-201.

Lecture: three hours.

26-203 and 26-204. *Physics for Liberal Arts Majors* Four Credit Hours Each Semester

The aim of this course is to present the developments of modern physics n a manner suitable for students who do not have a strong mathematical background. A course designed primarily for the non-science major and he future teacher, it might be labeled "Physics for the Enlightened Citizen" for it will help the non-scientist act in an informed way in today's echnically oriented society. Topics covered in the two-semester course nclude mechanics, thermodynamics, electromagnetism, relativity, and quantum mechanics. 26-203 is a prerequisite for 26-204.

Lecture: three hours; laboratory: two hours.

26-205, 26-206, and 26-207. *Physics for Biology and Premedicine* Four Credit Hours Each Semester

Prerequisites: 30-103 and 30-104 or 30-201 and 30-202. 26-205 is a prerequisite for 26-206 and 26-206 is a prerequisite for 26-207.

Required of all premedical, biological, and science students who do not take 26-110, 26-211, and 26-212.

A course of elementary nature designed to stress the principles and the unifying concepts of classical and modern physics. Of particular interest to biologists, and to prepare premedical students to meet the requirements for admission to the better medical schools; 14 two-hour laboratory periods each semester, devoted to student experiments dealing with the topics of mechanics, heat, wave motion, optics, electricity and magnetism, nuclear physics.

Lecture: three hours; laboratory: two hours.

26-305. *Optics* Three Credit Hours

Prerequisites: 26-212 and 30-231 (Intermediate Calculus).

Required of all physics juniors; open to others.

Principles of geometrical and physical optics, the general equations of wave motion, reflection, dispersion, interference, diffraction, polarization, and coherence.

Lecture: three hours.

26-307. *Optics Laboratory* One Credit Hou

Corequisite or prerequisite: 26-305.

Required of all physics majors. Open to others only with the permissio of the instructor.

26-310. *Heat and Thermodynamics* Three Credit Hou

Prerequisite: 26-212.

Required of all physics juniors; open to others.

Kinetic theory of gases and transport phenomena, thermodynamics o gases. Maxwell-Boltzmann statistic, thermoelectricity, and theory o thermal radiation.

Lecture: three hours.

26-311 and 26-312. *Electricity and Magnetism* Three Credit Hour
Each Semeste

Prerequisites: 26-212 and 20-231.

Required of all physics juniors; open to others.

The electrostatic field and its effect on matter, the properties of magnetic fields and magnetic materials, electromagnetic effects, vector potentials, displacement currents, Maxwell's equations, Lorentz force on particles, periodic currents.

Lecture: three hours.

26-318. *Electronic Instrumentation* Four Credit Hours

Prerequisites: 26-207 or 26-212 and 30-201 or 30-231.

Required of all physics juniors; open to other science majors. Not intended for electrical engineering majors.

Brief review of D.C. and A.C. circuits. Introduction to theory and applications of solid-state diodes, transistors and other semiconductors, amplifiers, waveform generators, operational amplifiers, transducers, and digital electronics.

Lecture: three hours; laboratory: two hours.

26-319. *Mechanics* Three Credit Hours

Prerequisites: 26-212 and 30-231.

Required of all physics juniors; open to others.

Dynamics of rigid bodies, Lagrangian and Hamiltonian dynamics, collision kinematics, and central force field motion.

Lecture: three hours.

26-401 and 26-402. *Modern, Atomic, and Nuclear Physics* Three Credit Hours Each Semester

Prerequisites: 26-305, 26-310, 26-311, 26-312, and 26-319.

Required of all physics seniors; open to others with the permission of the instructor.

The basic experimental data leading to quantum mechanics and relativity are covered with special emphasis on understanding atomic and nuclear physics and fundamental particles.

Lecture: three hours.

26-403. *Advanced Laboratory Physics* One Credit Hour

Required of all physics seniors.

26-405 and 26-406. *Quantum Mechanics* Three Credit Hours Each Semester

Prerequisites: 26-305, 26-310, 26-311, 26-312, and 26-319.

Required of all physics seniors; open to others.

An introductory course in quantum mechanics with emphasis on physical principles rather than mathematical techniques. Stress is placed on understanding how quantum mechanics is used in explaining the behavior of physical systems.

Lecture: three hours.

26-419. *Research Planning* One Credit Hour

Required of all physics seniors.

An outstanding recent development is chosen by one or more students and studied intensively.

26-420. *Senior Research Project* Three Credit Hours

Prerequisite: 26-419.

Required of all physics seniors.

The work started in 26-419 (Research Planning) is applied in the laboratory, or if theoretical, to a better understanding of natural phenomena.

Department of Political Science

Professor: Arcilesi
Associate Professors: Kingston, Benson, Baker, Beebe, Steed, Boykin
Assistant Professors: Moreland, Hudson, Davis

The political science curriculum, designed to give the student some understanding of the political, social, and economic aspects of the modern world, emphasizes a spirit of scientific inquiry. Academic courses most commonly required for admission to the best graduate schools in political science, economics, and history are available to its majors. The majority of students interested in the study of law choose political science as their major subject area. It has a strong appeal for those who anticipate administrative careers in government, particularly in the Foreign Service and the numerous intelligence agencies of the national government. The required course of study for political science majors is tabulated in the curriculum of the department on pages 128 and 129.

60-201. *American National Government* Three Credit Hours
A study of the American constitutional background, the rights and liberties of persons, political opinions and voting behavior, political parties and pressure groups, and the organization and the role of the President, the Congress, and national courts in policy formation and administration.

60-202. *State and Local Government* Three Credit Hours
The course is concerned with the role of the states in the American constitutional system, the institutional organization of state governments, and the relationships between these agencies and those of the political subdivisions.

60-301 and 60-302. *International Law and Organization* Three Credit Hours Each Semester
Required of political science juniors. Open to others receiving permission of the instructor.

A survey of international law as developed through treaties, customs, usages, and decisions of national and international tribunals; a study of the League of Nations, the United Nations, and the international machinery or the promotion of harmony between states.

60-308, Problems in International Law, may be substituted for 60-302.

60-303. *American Foreign Relations* Three Credit Hours

Required of political science juniors. Open to others receiving permission of the instructor.

A study of the organization of the American Government for the conduct of foreign relations; the institutions and elements in the making of foreign policy; emphasis on the important problems and developments of the postwar years.

60-304. *American Parties and Politics* Three Credit Hours

Required of political science juniors. Open to others.

An analysis of the dynamics of American politics, with particular emphasis upon the factors entering into the formulation of public opinion, the role of pressure groups, and the operations of the party system.

60-305. *Public Administration* Three Credit Hours

Prerequisite: 60-201, American National Government.

An introduction to the role of administration in the governmental process which considers principles of administrative control, personnel, and fiscal management.

60-307. *Comparative Politics* Three Credit Hours

Required of all political science majors. Open to others with permission of the instructor.

An analysis of various political systems in terms of institutions, structure, and function. Emphasis on the development of common criteria for the evaluation and comparison of these divergent systems.

60-308. *Problems in International Law* Three Credit Hours

Prerequisite: 60-301, International Law.

An advanced survey of the elements of international law and the application of basic principles. Emphasis will be given to an in-depth study of jurisdiction over aliens, state liability for official acts, international reclamations, and the regulation of international hostilities.

60-309. *American Political Thought* Three Credit Hours

A study of the basic political ideas which have developed in response to American constitutional, social, and economic conditions.

60-310. *American Presidency* Three Credit Hour

Open to juniors and seniors.

A study of the modern Presidency with attention to its origins and it historical and constitutional development. Emphasis is placed on a examination of the various roles and functions of the President and on a analysis of Presidents in action.

60-311. *The Legislative Process* Three Credit Hour

Organization and procedures of a legislative body. Its role in polic formation and its relationships with other parts of the political an governmental system.

60-313. *National Security Policy* Three Credit Hours

An examination of the components of United States security policy. Factors, both internal and external, affecting national security will be considered.

60-314. *Southern Politics* Three Credit Hours

Open to juniors and seniors with permission of the department head.

A study of politics in the South in both regional and national contexts. Attention will be given to the politics of individual states and to the analysis of regional developments in such areas as race relations, political behavior, and party competition.

60-315. *Law and the Legal Process* Three Credit Hours

Open to juniors and seniors.

A general survey of the American legal process (except for the criminal justice system), including the following: the nature and function of law, the organization of legal institutions (primarily the state and federal judiciaries), an introduction to civil law and the civil justice system, the roles of judges and lawyers, the judicial decision-making process, and the impact of court decisions.

60-316. *Criminal Justice* Three Credit Hours

Open to juniors and seniors.

An introduction to the American criminal justice system, including the following: the history and philosophy of law enforcement, the nature of crime in the United States, an introduction to the substantive criminal law, the nature and theory of the criminal justice process from arrest to corrections, and the roles of the major actors in that process (police, prosecutors, defense lawyers, judges, and corrections personnel).

0-401 and 60-402. *Constitutional Law* Three Credit Hours
Each Semester

Required of political science seniors. Open to juniors and seniors.

A study of the underlying and basic principles of the Constitution as reflected in the leading decisions of the United States Supreme Court.

0-405. *International Politics* Three Credit Hours

Required of all political science seniors. Open to others receiving permission of the instructor.

An analysis of the international system, of the nation-state, the role of power in international politics, and the goals and instruments of foreign policy.

0-406. *International Politics* Three Credit Hours

Required of all political science seniors not taking 60-413, Urban Politics.

An investigation of current international relations, especially the problems and policies of the Communist Bloc, the North Atlantic Alliance, the European Common Market, and the less developed countries. These problems and policies are considered with particular attention to heir relations with East-West rivalry.

60-407 and 60-408. *Political Theory* Three Credit Hours
Each Semester

Required of political science seniors not taking 60-411 and 60-412. Open to liberal arts seniors.

Major theoretical writing from Plato to Thomas Hill Green; emphasis on a comparison of basic ideas and on the relationship between theories and contemporary problems.

60-409. *Far Eastern Affairs* Three Credit Hours

Open to juniors and seniors.

A survey of China from 1911 to the present, with emphasis on the rise of Communism in China, on the structure and operation of the Chinese People's Republic, and on contemporary Chinese foreign policy.

60-410. *Southeast Asian Affairs* Three Credit Hours

Open to juniors and seniors.

A study of the development of selected countries in the area with emphasis on the problems of transition, ideology orientations, roles in the cold war, and the importance of the area to the national interest and foreign policy of the United States.

60-411. *Scope and Methods in Political Science* Three Credit Hour

Open to juniors and seniors receiving permission of the instructor.

An examination of methods in the scientific study of political phenomena. Emphasis will be given to the systematic study of politics an contemporary research problems in political science, including researc design, data collection, and data analysis.

This course formerly was numbered 60-419.

60-412. *Contemporary Political Analysis* Three Credit Hour

Prerequisite: 60-411 or permission of the department head.

Open to juniors and seniors with permission of the department head.

An introduction to some of the more important approaches to contemporary political science. Emphasizes the importance of concept formation in developing general strategies for the study of political phenomena. Some of the approaches that will be studied include group theory, politics as process, the power approach, systems theory, structural-functional analysis, communications theory, game theory, and the individualistic-psychological approaches.

This course formerly was numbered 60-423.

60-413. *Urban Politics* Three Credit Hours

This course is a study of mass participation in urban political affairs, political parties on the local level, the municipal reform movement, and alternative approaches to the study of local political systems. Emphasis is placed on the problems of local governments in metropolitan areas.

60-414. *Latin American Affairs* Three Credit Hours

Open to juniors and seniors.

A study of the Latin American power elements and related problems; emphasis on the relationships and importance of the area to the United States.

60-415. *Russian Affairs* Three Credit Hours

Open to juniors and seniors.

An analysis of the geographic, demographic, economic, political, psychological, and military bases of Soviet power; emphasis on the objective techniques and operations of Soviet foreign policy.

60-416. *National Policy and Administration* Three Credit Hours

Open to juniors and seniors.

Analytical and critical survey of the process of formulating and administering basic domestic policy, the role and influence of special interest groups; the problems of the President and Congress in formulating general interest programs.

60-417. *African Politics* Three Credit Hours

Open to juniors and seniors.

An analysis of the politics and modernization in Africa; emphasis on the newly independent states of the continent and their political, cultural, demographic, and historical characteristics; and consideration of tribal factors influencing the process of modernization.

60-418. *Middle Eastern Affairs* Three Credit Hours

Open to juniors and seniors.

A survey of the Middle East; a study of the power elements and related problems; emphasis on the role of the area in American foreign policy.

60-420. *Senior Research Project* Three Credit Hours

Required of all seniors as a prerequisite to graduation. An approved three-credit-hour elective may be substituted.

60-422. *Public Opinion and Propaganda* Three Credit Hours

A systematic analysis of the political process incorporating the technique of opinion survey design and analysis; the analysis of voting behavior; and the study of the mechanisms for influencing opinion through the use of modern techniques of propaganda.

60-424. *Political Ideology and Violence* Three Credit Hours

Open to juniors and seniors.

A course designed to study selected contemporary ideologies and political violence. It will focus on radical ideologies, revolutionary movements, and transnational violence which have important political consequences both domestically and internationally.

Sociology

61-201. *Introduction to Sociology* Three Credit Hours

The scientific study of principles and comparisons in society and culture as these relate to population and communities, behavior systems, group collectivity and structure, social change, and institutions.

61-202. *Social Problems* Three Credit Hours

Analysis of deviant behavior and those factors affecting the disorganization of small groups, complex organizations, and societies.

61-302. *Criminology* Three Credit Hours

Prerequisite: 61-201 or permission of department head.

A study of crime, its causes, conditions, prevention, and treatment; a presentation of theories and hypotheses, supported by concrete facts, designed to assure the student that the theories proposed are based upon realities and exact observation.

This course formerly was numbered 61-401.

61-303. *Urban Sociology* Three Credit Hours

Historical, demographic, and ecological materials are used to study urban society with respect to its institutions, differentiation, integration, and decentralization.

This course formerly was numbered 61-402.

Anthropology

62-201. *General Anthropology* Three Credit Hours

Man's biological and cultural origins as studied by physical anthropologists, archaeologists, and linguists.

This course formerly was numbered 62-301.

62-202. *Cultural Anthropology* Three Credit Hours

A comparative study of culture; habitat, technology, and economy; kinship and political organization; life cycles in primitive societies.

This course formerly was numbered 62-302.

62-303. *Preindustrial Societies* Three Credit Hours

Prerequisite: 61-201 or permission of department head.

A survey of preindustrial societies with emphasis upon ecology, kinship, life cycle, political organization, economics, source materials, methods of study, and other topics of interest.

This course formerly was numbered 62-401.

62-304. *Industrial Societies* Three Credit Hours

Prerequisite: 61-201 or permission of department head.

A survey of the landmark literature relating to the transition from agrarian to industrialized society with emphasis upon population composition, stratification, economic and political orders, and other topics of current interest.

This course formerly was numbered 62-402.

Interdisciplinary Studies

5-301. *Society and War: Ancient Greece* Three Credit Hours

Team taught by three professors in history, political science, and nglish.

A historical survey of the major features of classical Greek culture ith special emphasis placed on the nature of Greek warfare and its elation to the political and social theories of Plato and Aristotle. The ristocratic ideal which motivated Greek warriors, as well as contemorary criticism and satire of that ideal, will be explored in epic, tragic, nd comic works of Greek literature.

5-302. *Society and War: Ancient Rome* Three Credit Hours

Team taught by three professors in history, political science, and English.

This course surveys the failure of Greek political ideals, Rome's emergence as a world empire, its fall as seen through the eyes of St. Augustine, nd studies the significant intellectual developments during this period, e.g., the evolution of Stoic philosophy, the work of Roman lawyers, and the foundations of Christian culture laid by the Church Fathers. The changing ethical attitudes of Roman society towards war will be investigated in the works of authors representing the early, "golden," and "silver" periods of Roman literature.

65-303. *Society and War: The Middle Ages* Three Credit Hours

Team taught by three professors in history, political science, and English.

A study of medieval warfare in relation to feudal society and the political and intellectual struggles between spiritual and temporal power. Special emphasis, naturally, is given to the Crusades, the spirituality which nourished them, and the cultural effects—economic, ethical, and philosophic—which they produced in Western life.

65-304. *Society and War: Early Modern Europe* Three Credit Hours

Team taught by three professors in history, political science, and English.

The decline of medieval, chivalric ideals and the rise of modern warfare studied in relation to the ideological conflicts of the period and the development of the autonomous state. The ideas which gave rise to modern society and modern warfare, and those which opposed them, will be studied in religious writings, political treatises, and works of imagina tive literature.

65-324. *Technology and Society* Three Credit Hou

Open to juniors and seniors in all majors.

An exploration of the impact of 20th century technology on society, o the nature of the technology/society interfaces, and of the problem encountered in predicting societal response to technological develop ments. Also included is an examination of the influence of private an public policies in shaping technology and, through it, society; and demonstration of the need for joint action by technologists and hu manists.

65-441 and 65-442. *National Interdisciplinary Studies* Three Credit Hour Each Semeste

Prerequisite: approval of course coordinator.

An interdisciplinary study of a selected area of the United States (state or region). An area will be studied, including its history, economic and cultural geography, politics, the impact of military and economic development, international business relations, and their importance to decision-making.

65-451 and 65-452. *International Interdisciplinary Studies* Three Credit Hours Each Semeste

Prerequisite: approval of course coordinator.

An interdisciplinary study of a selected area (e.g., Latin America, the Middle East, the Far East, or others). Faculty and guest lectures, using a flexible format, develop an understanding, appreciation, and the interrelationship of the geography, history, culture, politics, military practices, economics, etc. of the area, and their importance to decision-making.

Department of Psychology

Professor: Bowman
Associate Professor: Doran
Assistant Professor: Pietrangeli

The program in psychology emphasizes the contribution that psychology can make to a liberal education through stimulating intellectual development, personal growth and adjustment, respect for others, and the feeling of social responsibility. The curriculum in psychology is designed to familiarize the student with current methods and theories in such fundamental areas of investigation as motivation, perception, learning, personality, and social interaction. By taking the required courses with various electives, the student will have a foundation for graduate work as well as the psychological skills essential for employment in certain types of jobs. Majors in psychology will find openings in personnel work, mental hospitals, schools for the handicapped, and many other positions of a similar nature.

A student majoring in psychology may expect to develop rigorous habits of observation with reference to psychological phenomena, to become aware of the need for statistical orientation in the consideration of psychological data, and to recognize the role of multiple causation in the determination of human behavior.

The major program in psychology, which leads to the Bachelor of Arts degree, consists of 36 hours of course work in psychology, including 51-201, 51-203, 51-301, 51-302, 51-304, 51-305, 51-306, 51-310, 51-403, 51-404, 51-405, and 51-407. Those majors who elect chemistry or physics in the sophomore year will be required to enroll in 47-104 as one of their approved electives.

51-201. *General Psychology* Three Credit Hours

Elective for sophomores, juniors, and seniors.

An introduction to the scientific study of behavior; emphasis upon experimental investigation of such fields as attention, perception, learning, intelligence, emotion, and personality.

51-203. *Research Design in Psychology* Three Credit Hours
Prerequisite: 51-201.

An introduction to descriptive and inferential statistics used in psychological experimentation. Particular emphasis is placed upon hypothesis testing by means of the t-test, and simple randomized designs in the analysis of variance.

51-301. *Experimental Psychology I* Three Credit Hours
Prerequisites: 51-201 and 51-203.

Comprehensive treatment of research findings in experimental psychology in such areas as sensation and perception. Emphasizes the essential importance of rigorous hypothesis formulation and the design of experiments to test hypotheses.

51-302. *Experimental Psychology II* Three Credit Hours
Prerequisites: 51-201, 51-203, and 51-301.

A continuation of Experimental Psychology I.

51-304. *Abnormal Psychology* Three Credit Hours
Prerequisite: 51-201.

Findings based upon experimental investigation of such fields as attention, perception, and association; theories of personality; discussion of the common neuroses and psychoses.

51-305. *Social Psychology* Three Credit Hours

A study of the individual in relation to his social environment with special attention to group behavior, social motivation, and individual adjustment to group situations. May be considered a social science course.

51-306. *Theories of Personality* Three Credit Hours

A study of major contemporary theories of personality with special emphasis on the biological and psychological foundations and integrative aspects of personality.

51-307. *Mental Hygiene* Three Credit Hours

Science of preserving psychological health. The causes and prevention of mental abnormalities.

51-310. *Human Growth and Development* Three Credit Hours

Survey of total human development—mental, emotional, physical, and social—prenatal to senescent stages. Patterns of normal and deviate behavior.

51-403. *Psychology of Learning and Motivation* Three Credit Hours

Prerequisite: 51-201.

A comprehensive and critical review of the experimental literature in the areas of learning and motivation, including the major learning theories and the motivational determinants of behavior.

51-404. *Applied Psychology* Three Credit Hours

Application of the principles of psychology to such topics as education, mental health, industry, crime, advertising, and personal problems. Emphasis will be upon a practical system of psychology and the well-integrated personality.

51-405. *History and Systems of Psychology* Three Credit Hours

Prerequisite: 51-201.

Historical survey of psychology, emphasizing contributions of major "schools" of psychology, theories, their place in science, and current theoretical trends.

51-407. *Psychological Testing* Three Credit Hours

Prerequisite: 51-201.

A survey of the theory and principles of psychological testing; demonstration and discussion of representative tests of intelligence, aptitude, achievement, interests, and personality.

51-420. *Senior Research Project* Three Credit Hours

Prerequisite: approval of department head.

An independent research project culminating in a formal paper. Recommended for students planning graduate study. Approval for enrollment based on capability of applicant and the acceptance of a written proposal.

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